

REDACTED VERSION

Exhibit A23 to C. Cramer Declaration

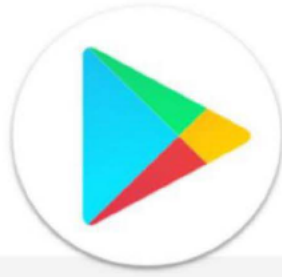
EXHIBIT 37

- **AR / Lens.** Lens would like to work with [REDACTED] to integrate on-device vision capabilities (aka LensLite) from Google to their flagship cameras starting with [REDACTED]. This is complementary to [REDACTED]. On the AR front, working relationship is good, and support for AR Core is strong.

Samsung in the News

- [REDACTED] has big earnings miss due to slowness in component demand, pressure on smartphone business
- [REDACTED] partners with Apple to bring iTunes, AirPlay support to [REDACTED]

EXHIBIT 38



Play Monthly Review

June 2020

Agenda

- Business Performance Update
- [REDACTED] BC Review
- Games Streaming



YTD Revenue [REDACTED] Y/Y [REDACTED] to plan)
Core business ([REDACTED] y/y) and ads ([REDACTED] y/y)



[REDACTED] to plan
 [REDACTED] Y/Y

- Continued performance acceleration driven by COVID-19 impact on digital consumption - Q2TD growth at [REDACTED] Y/Y
- Continued headwinds from Android market share losses [REDACTED] YoY (Android actives, latest 28d avg)



[REDACTED] to plan
 [REDACTED] Y/Y

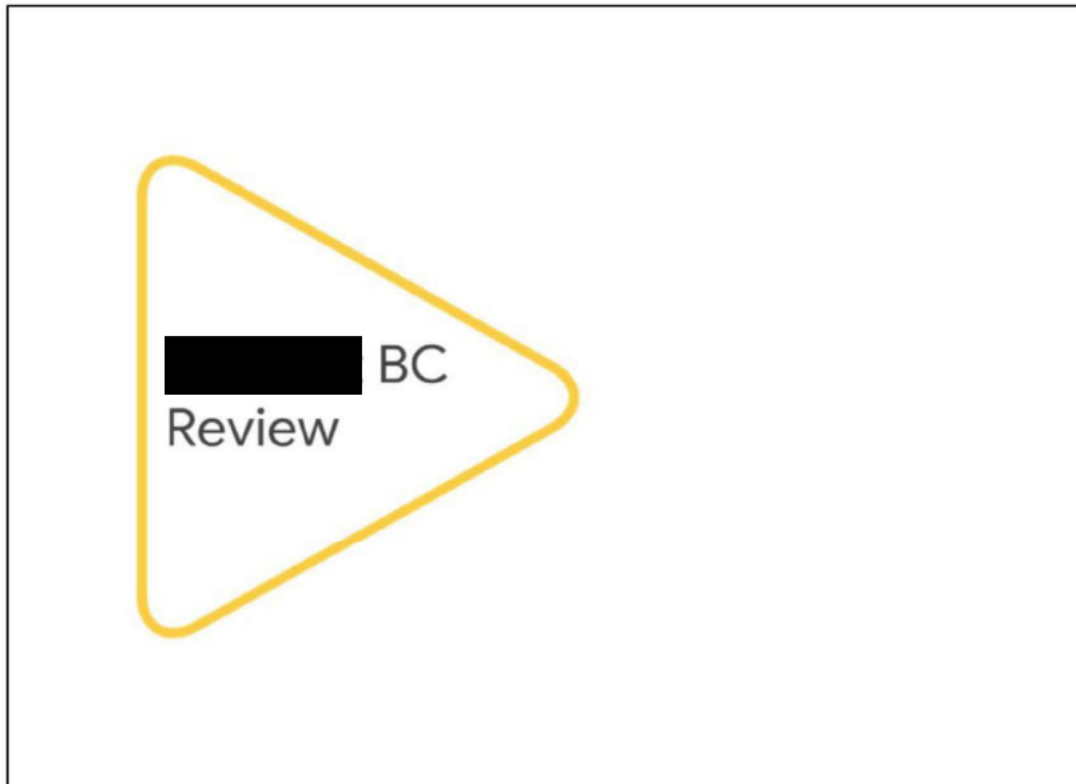
- Performance acceleration driven by COVID-19
- Longer term headwinds from aging content, market saturation and user mix persist



[REDACTED] to plan
 [REDACTED] Y/Y

- Continued slowdown in [REDACTED] spend in Q2; [REDACTED] spend launch to date, -[REDACTED]

Data as of 06/09. Country level stats for core only (excl Ads)
 Note that Q1'20 has an extra day and the growth stats shown here benefit from that



Executive Summary

Hug is working

██████ Hug developers have signed or are in active redlines

Program meeting It's key goals

1. Drive Play Consideration
2. Drive xPA product adoption
3. Improve dev sentiment

████████████████████
████████

██████ is a critical Holdout

██████ is strategic to Google & Play. Their portfolio drives ██████ of Play revenues.

██████ is assessing two options to grow their business

- build an off Play payments platform (██████ margin risk through 2023) or
- rely on Play subscriptions if we provide the right incentives

Why are we here today? 3 items for BC Approval

Revised Hug deal for ██████

████████████████████
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████████████████████

██████ requires a bespoke GVP deal to mitigate risk of shifting revenues to off Play (██████ margin risk by 2023)

Google Top Partner;
Strategic to Play

██████ holds significant influence in gaming through its large portfolio which includes:

- ██████ top grossing game devs; ██████ by MAU
- ██████ Hug devs

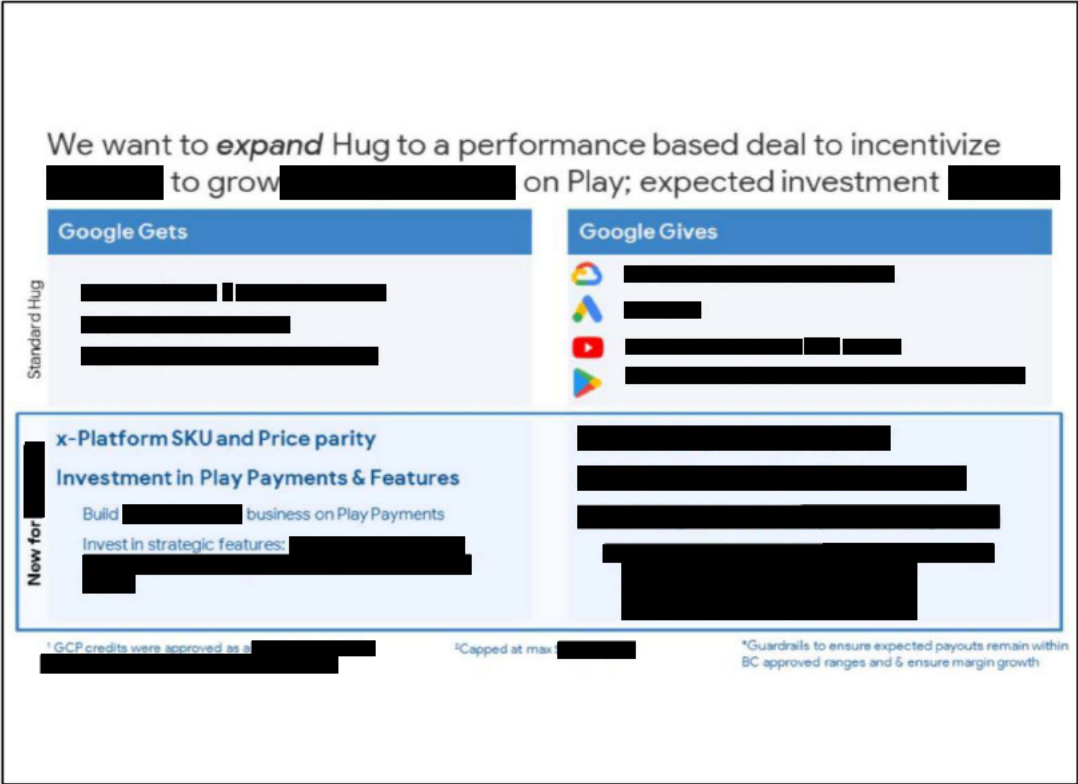
Growth of Battle
Passes & off Play
Payments plan create
new margin risk

In game "██████" drive 35-40% game revenue, lower barrier to moving off-Play
Actively planning to launch 1P off-Play platform for ██████. Play has no jurisdiction
Strong contagion risk across portfolio & ecosystem

██████ Play margin at risk
through 2023, assuming
contagion

Expressed interest to
partner with Play "██████"
Subs when linked
with GVP incentives

Deal ties incentives to
growth on Play over three
years to mitigate off-Play
platform investments



Key Questions & Next Steps

For [REDACTED]

- Deal Approved
- Start negotiations with [REDACTED]
- Build in checks & balances to evolve the deal over time

For Google

- Create a framework for xPA P&L + Accounting trade-offs for future deals
- Create model for Hug ROI



Contents

- Overview of Game Streaming on Mobile -- Landscape & Key Players
- Play Policy
- Stadia Deep Dive
- Commercial Deal Framework

Exec Summary

The game streaming space offers the potential to provide new, hi-fi gaming content to Play users.

Play's existing policies, including payment policy, are clear re game streaming

- Play's policies apply
- All transaction types need to use Play billing. Apple has same policy.

At this time and until we see how the ecosystem evolves, we believe it's prudent to maintain our current policy for game streaming, and require Play billing integration

- Provides **trusted and safe user experiences** on Android / Play, including payments
- **Maintains policy consistency** across games ecosystem (reduces regulatory and business risk)

Nvidia violates policy today → need to remediate. xCloud & Stadia most likely want revenue share cut

We believe it's worth considering a commercial deal for games streaming because (1) [primary] game streaming has potential to bring new, hi-fi content to Android users, (2) [secondary] we want to lower agitation risk from key players, and (3) [tertiary], games streaming platforms have business model constraints

Commercial deal guiding principles:

- Targets and incentivizes non-duplicative, hi-fi / AAA content
- Minimizes risk / contagion to core business (games IAP)
- Establishes objective developer eligibility criteria; offer applies consistently across all eligible games streaming players (whatever Stadia gets, others get)

Preliminary Commercial deal framework:

- Target deal towards premium **game transactions and subscriptions**; not IAP (game streaming IAP is small today)
- Evaluate if Hug-like is sufficient; if not, revisit rev share

Game Streaming Overview Landscape & Key Players

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The game streaming space is diverse; we believe “direct streaming” is most attractive to users and to Play

	Description	Attractiveness to Play	Attractiveness to Users
Direct Streaming	<ul style="list-style-type: none"> Runs on cloud storage and compute Visuals & I/O streamed to users over the Internet (can't play offline) Gaming focused UX Multiplatform (not limited to mobile) E.g. xCloud, Stadia, NVIDIA 	<ul style="list-style-type: none"> Enables hi-fi PC/console gaming on Android New user experiences (x-form factor gameplay) Spend nascent and growing: est. ~\$150M (TBC w/ Finance) Play revenue by 2023 	<ul style="list-style-type: none"> Top 3 players: 2.1M 30DA Installs¹ Flexible, cross-form factor gameplay Enabling hi-fi, premium titles on Android appealing to broad segment of users (including casual gamers)
Compute Mirroring	<ul style="list-style-type: none"> Extend gameplay to mobile device by tethering to a PC or console on user's local network E.g. Steam Link, PS4 Remote Play 	<ul style="list-style-type: none"> Users must own separate device (e.g. gaming PC or a high-end console) Likely limited financial opportunity (Apple does not charge on iOS) 	<ul style="list-style-type: none"> Steam Link: 1.9M 30DAI PS4 Remote Play: 3.8M 30DAI Valuable to <u>existing PC/console users</u>
Generic PC in the cloud rental	<ul style="list-style-type: none"> General purpose cloud PC rental, user decides whether to load games or other software E.g. Shadow 	<ul style="list-style-type: none"> Not necessarily gaming focused Does not provide new or differentiated user experiences 	<ul style="list-style-type: none"> Shadow: ~100k Installs Niche value to users who want high-end PC capability on mobile
Other platforms w/ streaming-like capabilities	<ul style="list-style-type: none"> Internet connection required for continual game asset delivery 3Ps create add'l sandboxed content E.g. Roblox 	<ul style="list-style-type: none"> Varies, similar to standard Play devs vs. game streaming players 	<ul style="list-style-type: none"> Roblox: 55M 30DAI Appeals to younger users, creator ecosystem

1. [gohlavapps-gamnav](#)

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Within direct streaming, 2 key archetypes exist

Game Streaming Space	Direct Streaming Archetype	Key Characteristics
<div>Direct Streaming <small>(potential to enable hi-fi, premium games on a broad range of Android devices)</small></div> <div>Compute Mirroring</div> <div>Generic PC in the cloud rental</div>	<div>1 Direct relationships with 3P developers <small>(e.g. [REDACTED])</small></div> <div>2 Content Provided by 3P Storefronts <small>(e.g. [REDACTED])</small></div>	<ul style="list-style-type: none">Examples: [REDACTED]Bus. model: subscription revenue + pays out 70% of IAP and premium revenue to 3PsPlay Status: [REDACTED] in beta w/ consumption-only; [REDACTED] uses Play billing today (but no rev share) <div>Example: [REDACTED]</div> <ul style="list-style-type: none">Bus. model: [REDACTED] collects subscription revenue, leaves game purchases and IAPs to 3P stores (Steam, Epic, Ubisoft)Play Status: available on Play without GPB (policy violating)

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Summary of prioritized direct streaming players

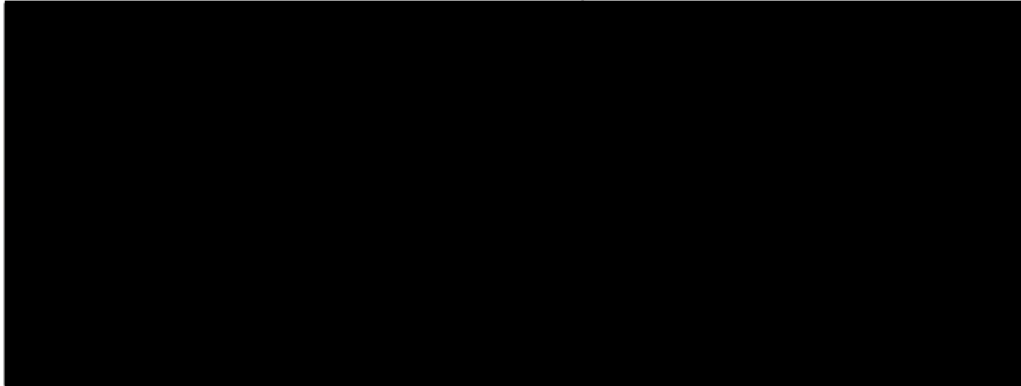
	1 Direct relationships with 3P developers	2 Content Provided by 3P Storefronts	
What are they selling?	Subs, a la carte premium games, IAPs	TBD: Gamepass model vs. premium games	Content provided by 3P storefronts
Pricepoint	\$10/mo for subs (includes free games) and premium games (avg. \$35 per game)	TBD, consumption only today; anecdotally plans to add IAPs	\$5/mo Subs (for priority access) and premium games
Gameplay Surfaces	Android, ChrOS/PC/Mac, Web, Livingroom (Chromecast), iOS TBD	Android, iOS, Livingroom (Console) TBD	Android, Livingroom (Console)
Catalog Overlap w/ Play?	Limited overlap w/ Play (e.g. PUBG vs. PUBG Mobile)	Limited overlap w/ Play (1P, 3P console focus)	Some overlap (Steam, Epic titles)
x-Google Relationships	P2B considerations around rev share	TBD	\$1M GCP spend, Co-marketing deal
Agitation Risk	N/A	Limited agitation	Expected Agitation (Epic ptn.)

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Goal is to provide bespoke deals to prioritized players

Full gameplay and purchase experiences available on Stadia for Android



Users can launch directly into gameplay on select Android devices¹

*[Redacted] subscription, game purchases, and IAPs
utilize GPB backend and familiar payment flow*

Note 1. [Stadia compatible mobile devices](#)

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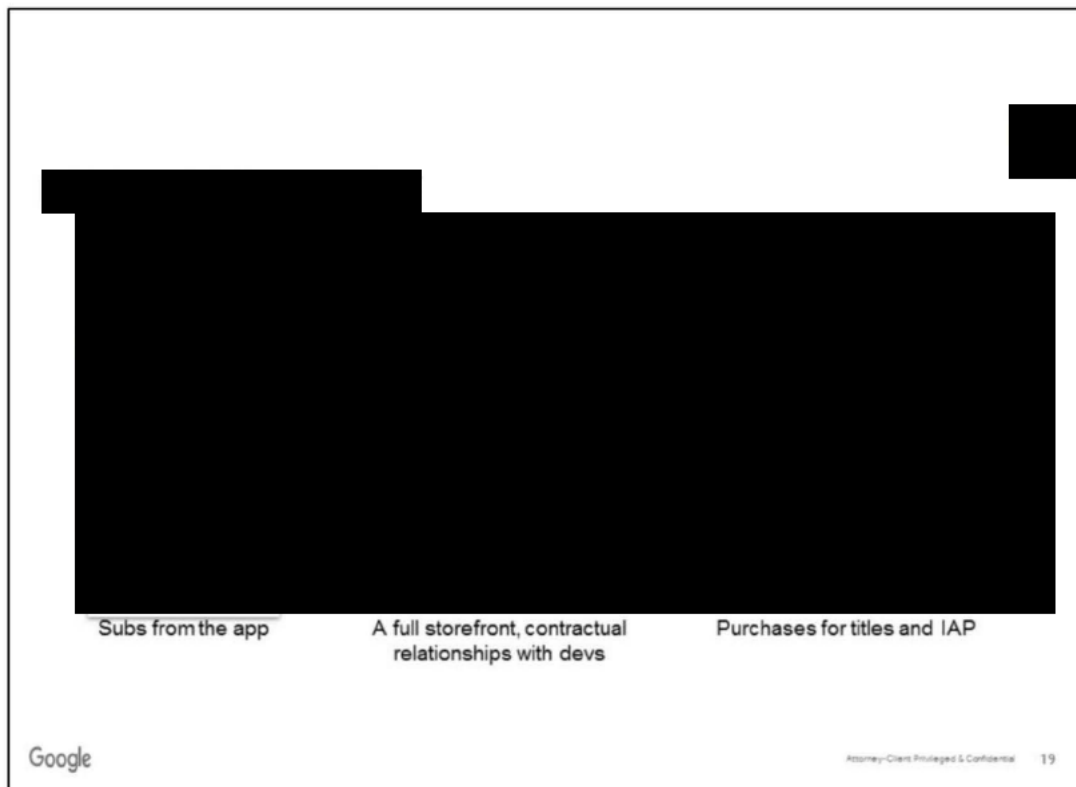
[REDACTED] demo app is consumption-only today [REDACTED]

[REDACTED]

[REDACTED] demo library is free to play today, IAPs aren't available (though [REDACTED] has indicated this will change as app fully launches)

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Policy Overview

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Play & iOS' existing policies apply to game streaming



Policy Language

- Game streaming platforms must abide by all store policies (content, privacy, security, payments, etc.), just like all other games distributed by the platform. More detail on Play policy [here](#)
- If gameplay is not enabled (e.g. content cannot be consumed in the app), Play / Apple billing aren't required

Enforcement/
Handling

- [REDACTED] violates policy (this was a miss; team is conducting post-mortem)
 - Need to remediate [REDACTED]
 - Going forward, all other streaming players will be subject to above policy
- [REDACTED] not available on iOS
 - [REDACTED] transactions only, negotiating to add store
 - [REDACTED] with full compliance with policies, including payments

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██████ is in violation of Play's monetization today; we plan to remediate via policy enforcement

Placeholder for enforcement and remediation plan

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Stadia Case Study

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Current state of [REDACTED] on mobile



- Gameplay enabled (premium Android only)
- Uses Play billing
- Doesn't pay rev share (no transfer cost accounting in place)



- No Gameplay enabled (transactions only)
- Uses Google Pay today and doesn't pay rev share
- Will have to migrate to Apple billing if gameplay is enabled

revenue is evenly split between mobile and web today

		Est. % of Total Revenue		
		Subscription	Premium Games	In-App Purchases
Mobile	Android (Phone + Tablet)	15% of total revenue		< 1%
	iOS ¹ (Phone + Tablet)	12%	22%	1%
Web		50% of total revenue		
Living Room (Chromecast)		None consumption-only today		

Source: Strategy Deck, Ptn. Team - yiannis@, mabba@. Note: 1. Apple billing policy doesn't apply until enables gameplay on iOS i.e. transactions do not require rev share payouts today

1 total revenue split: 15% on Android, 35% on iOS (despite no gameplay) today and 50% on web

2 Subs and Premium games contribute ~98% of mobile revenue, IAPs only ~2% today

3 Enabling gameplay on add'l Android and iOS devices could shift revenue from web to mobile*

*conjoint analysis predicted a 10% increase in active users once gameplay is enabled on iOS

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considering removing some transactions to manage margins as user base grows on iOS

	Gameplay	Game Purchases & SP Subs	In-Game Purchase	Pro Subscription	User Reach / Revenue Impact	Margin Impact
Current Model (S0)	X	✓ (no rev share)	-	✓ (no rev share)	-	-
Full iOS Store (S1)	✓	✓*	✓*	✓* (price increase)	+least friction +allow game & in-game impulse buys	-0% on game & in-app sales +sub net price parity
Everything But Game Purchases (S2)	✓	X	✓*	✓* (price increase)	+low sign-up friction +allow in-game impulse buys	+sub net price parity +keep 30% on game sales
In-Game Purchases Only (S3)	✓	X	✓*	X	-have to sign up on web +allow in-game impulse buys	+sub net price parity +keep 30% on game sales

Source: Strategy Deck; * revenue share with iOS required: 30% for purchases, 30% on subs (15% after year 1)

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Commercial deal thinking

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Commercial Deal guiding principles

- Targets and incentivizes non-duplicative, hi-fi / AAA content
- Minimizes risk / contagion to core business (games IAP)
- Establishes objective developer eligibility criteria; offer applies consistently across all eligible games streaming players (whatever [REDACTED] gets, others get)
- Defines clear gets for Play / Google

A commercial deal could unlock new Play revenue streams; no deal could limit available transaction types

We have two options, given what we have learned from [REDACTED] approach on iOS....

	1 Maintain policies (charge 30% on all transactions) <u>and</u> offer commercial terms on Premium Games + Subscription spend (effective rev share discount)				2 Maintain policies (charge 30% on all transactions); <u>no</u> commercial offer			
	Gameplay	Game Purchases & AP Subs	In-Game Purchase	Subs	Gameplay	Game Purchases & AP Subs	In-Game Purchase	Subs
Potential responses from streaming games platforms	(S1) Full iOS Store	✓	✓	✓	✓	✓	✓	✓ (smaller price increase)
	(S2) No Premium Games	✓	✗	✓	✓	✗	✓	✓ (smaller price increase)
	(S3) IAPs Only	✓	✗	✓*	✓	✗	✓	✗

(S1) Full iOS Store
(S2) No Premium Games
(S3) IAPs Only

Indicates streaming players' most likely response

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Two worlds:

1. 30% w/ Hug deal means prem games + Subs + IAPs scenario is more likely or
2. 30% req'd w/ no Hug deal means [REDACTED] Android app may avoid selling premium games on mobile, or even go IAP-only (to avoid margin hit on subscriptions and premium games)

If we offer a commercial deal, consider focusing on incentivizing premium + subscription transactions

		Total ██████ Revenue			
		Gameplay Enabled?	Subscription	Premium Games	In-App Purchases
Mobile	Android (Phone + Tablet)	✓ (Premium only today)			
	iOS ¹ (Phone + Tablet)	✗			
Web		✓			
Living Room (Chromecast)		✓	Consumption-only today		

Source: ██████ Strategy Deck. Note: 1. Apple billing policy doesn't apply until Stadia enables gameplay on iOS i.e. transactions do not require rev share payouts today

1 A commercial offer could be apply to subscriptions and premium games i.e. pay back a % of these revenues

- Prioritize net new, premium games (we will not subsidize duplicative content)
- Broader Play goal to invest in subscriptions

2 Standard Play policy (and GPB requirement w/ 30%) still applies to IAPs purchased through streaming games platforms

- Avoids perverse incentives re. IAPs (Play's primary revenue stream)
- IAP contagion risk contained by policy

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We're considering commercial gives aligned with the Hug framework



- GCP credits
- Ex: anchor to % consumer spend



- Add'l YT services and eSports deals
- Ex: presence grants to jumpstart channels, esports distribution



- Ads credits
- Ex: anchor to UAC or other relevant ad spend



- Add'l Play services
- Ex: in-store promos, Games Home featuring, co-marketing \$, free subscription trials / retention offers

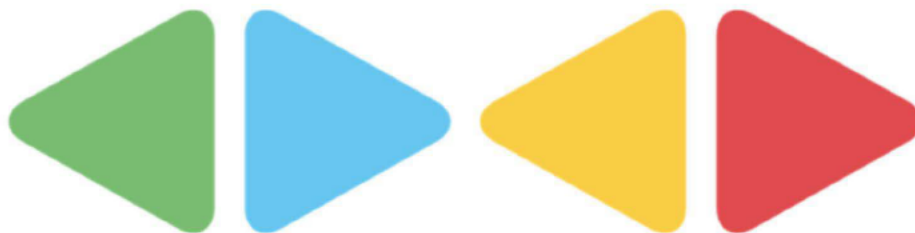
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Next steps for defining a commercial deal

- Work with Play Finance and BD to estimate Play revenue for key streaming players and determine the offer size
- Draft accelerator terms specific to each PA (3-4 weeks to draft terms)
 - Cloud
 - Ads
 - YT
 - Play
- Prepare business case; deal review forums (PEX, possibly BC)

Appendix



REDACTED VERSION

Exhibit A25 to C. Cramer Declaration

EXHIBIT 39

Message

From: Mike Herring [REDACTED]@google.com]
Sent: 4/8/2019 7:47:10 PM
To: Ruth Porat [REDACTED]@google.com]
CC: Kristin Reinke [REDACTED]@google.com]; Carlos Kirjner [REDACTED]@google.com]; Cristina Bitá [REDACTED]@google.com]; Steffan Tomlinson [REDACTED]@google.com]; Shafiq Ahmed [REDACTED]@google.com]; Marco Borla [REDACTED]@google.com]; Christian Cramer [REDACTED]@google.com]; Kristen Gil [REDACTED]@google.com]; Warren Wang [REDACTED]@google.com]; Cyrus Jame [REDACTED]@google.com]; Jason Grimm [REDACTED]@google.com]; Dan Walker [REDACTED]@google.com]; Bob Andreatta [REDACTED]@google.com]; Edmundo Balthazar [REDACTED]@google.com]; Kristin Maczko [REDACTED]@google.com]; Axel Brachet [REDACTED]@google.com]; Tia Arzu [REDACTED]@google.com]; Mike Herring [REDACTED]@google.com]
Subject: Briefing Note on Hug - for BC on 4/9

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Hi Ruth,

As you know, on Tuesday 4/9, the Play team is bringing a first-of-kind x-PA proposal to BC aimed at supporting 22 top Play gaming developers and promoting Play on [REDACTED].

Here are the relevant materials for preparation:

Briefing Note from Finance teams (longer than usual due to x-PA nature of proposal)

BC Deck

BC Compliance Doc

Please let us know of any questions!

Mike, Christian & Shafiq

(on behalf of the P&E, Ads, Cloud, YT and Marketing Finance teams involved)

Finance Briefing Note on Project Hug BC review

short links:

Context

Deal Components & Goals:

Deal Economics

P&L Impact

Risks and Mitigations

Finance Operations and Compliance considerations

X-PA Finance Recommendation and Considerations

Questions for Deal team

Context:

-
- **Increasing competition:** The mobile gaming opportunity (size and profitability) is attracting new entrants, including standalone 3P stores cutting rev share (e.g Epic, One Store), and OEMs leveraging distribution (e.g. [REDACTED]).
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- **"App store tax" meme accelerating:** Press increasingly reporting on 30% rev share model for Play and Apple store with negative sentiment e.g. Bloomberg, Android Police.
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- Several **large developers** are looking to leverage their own existing assets (IP, user relationship, payments) and are thus considering alternative distribution on Android.

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- **Lack of x-Google** offering for large developers: Large partners not satisfied with the status quo of relationship with Google, proactively asking for a more unified approach and better economics (i.e Play/Ads) from Google.

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- **Play revenue is** [REDACTED]
[REDACTED]

This context results in [REDACTED] for Play Business: We size the weighted risk facing Play to ramp to [REDACTED] revenue / [REDACTED] margin impact annually in [REDACTED] years ([REDACTED] revenue / [REDACTED] margin risk cumulative 2019-2022) . We believe the risk is highest with the 22 top developers moving their top grossing content outside of Play (leading to a contagion effect that will spread to other developers causing meaningful user and \$ revenue migration overtime) and with [REDACTED] who has renewed their pursuit and investment in [REDACTED].

Deal Components & Goals: At BC the team plans to present two proposals that they would like to pursue:

A.

- B. **Top Developers:** Re-invest Play margin to strengthen and broaden our commercial relationship with a targeted 22 major game developers at highest risk of churn (who have the ability to bypass and deprioritize Play) and enable them for further success (e.g. in their move to Mobile from PC gaming) instead of merely lowering Play's 30% rev share. Offer "One Google" approach to them and boost x-PA product adoption (i.e. Ads/Cloud/YT).

C.

D.

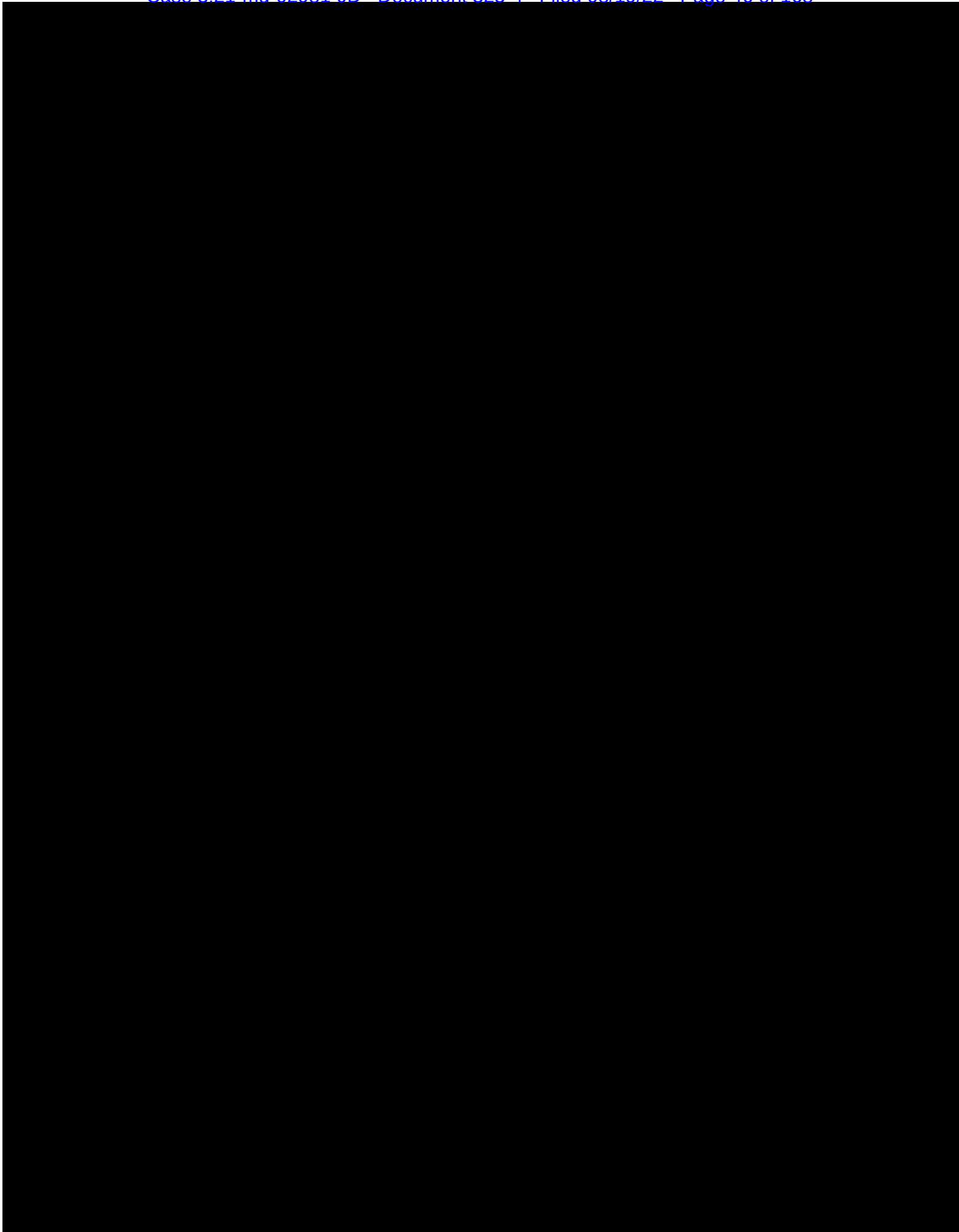
- E. [REDACTED]: Drive [REDACTED] commercial agreement with [REDACTED] to support their goals to create [REDACTED] while promoting Play on [REDACTED] and improving the Android gaming experience.

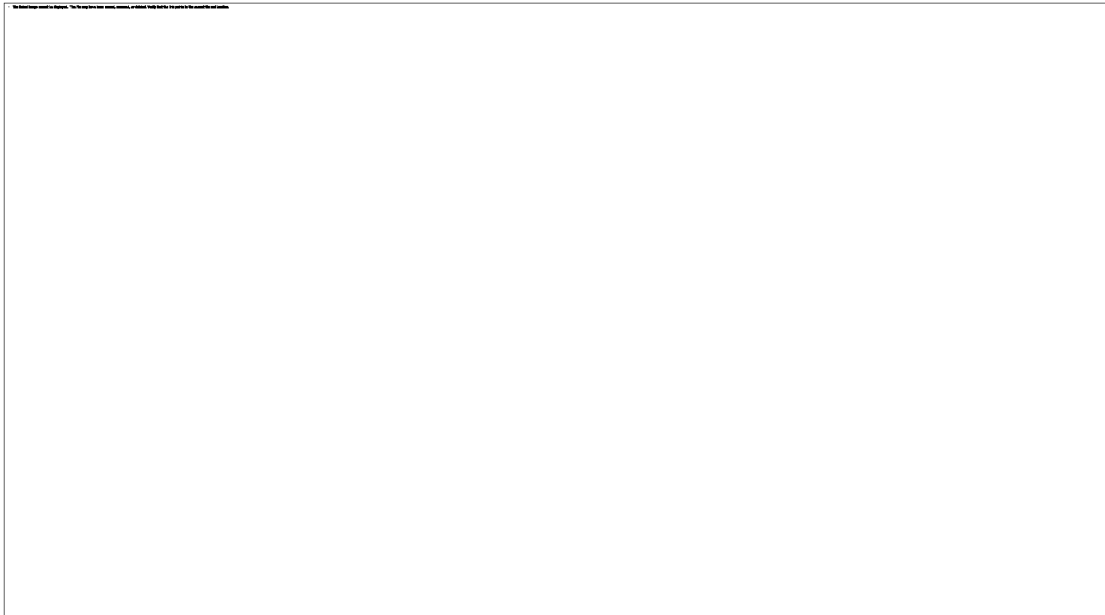
Deal Economics of each Proposal:

A.

- B. **Top Developers:** Deploy four new, x-Google commercial "Service Packs" (menu of offerings). These packs aim to enhance developer support and our value proposition at each stage of game title lifecycle: (1) Build & Test, (2) Launch, (3) User Acquisition, and (4) Community Development. On average these Service Packs cost Google P&L less (even after including Cost of HC and cannibalization) than the value that is offered to developers.

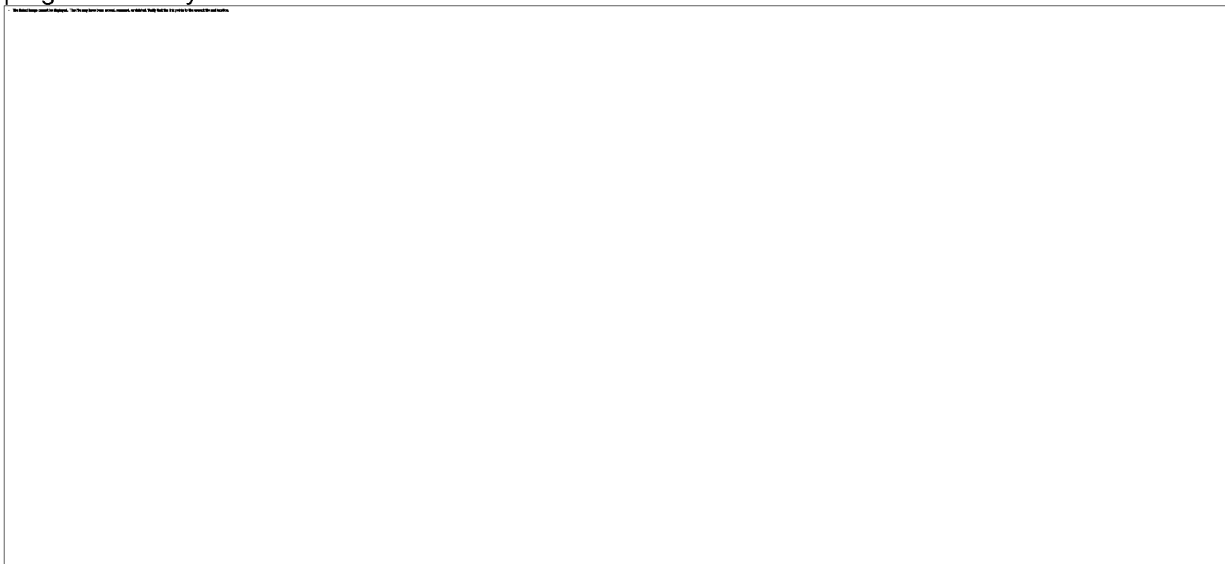
These packs bring together x-Google offerings across Ads/Cloud/YT/Play/Marketing as follows (annualized view of 2020 assuming User Acquisition Service Pack continuity):





Summary 4 yr P&L Impact of both Proposals including impact to each PA:

NOTE: This view assume continuity of offerings over the [REDACTED] per assumption called out below in order to highlight program efficacy.



Potential 2019 P&L Pressure solve: Although the above [REDACTED] estimate is an incremental ask beyond 2019's plan, we believe there is a path for Play to reduce this P&L pressure as follows: 1) self medicate [REDACTED] through [REDACTED] and 2) we now foresee [REDACTED] of incremental margin from potential revenue upside based on current performance trends and launch initiatives not currently in our financial outlook. In total they **could yield [REDACTED] in margin** to offset the overall 2019 investment need.

What Google is getting in return:

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- **Top Devs:** Developers commit to [REDACTED] of titles on Android and iOS and launch on Play on Day 1 of Android launch, keep titles available on Play, maintain game parity across platforms, get developers to co-invest
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- [REDACTED]: Play host and provides infrastructure (billing, security, updates) to [REDACTED] games/apps, Play and [REDACTED], improve Android gaming user experience through [REDACTED] adopting Android Gaming Standard
-
-
- **Revenue risk mitigation:** [REDACTED] of revenue, [REDACTED] of margin over 2019-2022 [REDACTED] of revenue / [REDACTED] margin risk in 2022) expected to be mitigated by these programs ([REDACTED] of total risk).

Risks and Mitigations

Risk	Mitigation
Uncertainty of timing and whether [REDACTED] deal would sign	Approving Top Dev program would provide a way to address the current risks
Uncertainty of whether devs would accept the offer thereby risk remaining	If Dev does not accept proposal then no cost would be incurred although continued risk would exist.
Potential risk of setting precedence and increases the risk of other developers/large UAC/DVIP advertisers asking similar credits/benefits vs. standard practices.	Packs are designed to meet eligibility criteria that would support providing to such devs (i.e. move to mobile). Ads has recognized risk. Current proposal and recommendation for a governance model or committee to review individual grants to designed to help reduce the risks across programs.
UAC Ads Credit Auction Risk:	[REDACTED] max in a given quarter, regularly monitor UAC growth and assess auction risk when issuing credits to Game launches

Finance Operations and Compliance considerations - complex (an open issue w/ Korea Cloud billing system is being investigated)

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- Operational and technical accounting for this arrangement is extremely complicated due to the unprecedented xPA linkage (Play & Cloud)
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- High degree of manual effort required to fully support the accounting for the various incentives (e.g., revenue deferral, tracking credit usage, recognizing revenue)
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- Accounting conclusions used for modeling purposes for both proposals are draft only, and subject to change upon the final terms of the program, formal sign-off with Technical Accounting and external auditors.
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- Cloud billing system today cannot handle the calculation of certain indirect taxes owed by developers in Japan and Korea introduced by the cross-entity arrangement between Play and Cloud. A potential solution for Japan has been identified, Korea is still being investigated.
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- **Additional Finance resources needed:**
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- 1 FTE for Ads Controllershship given manual implications of UAC credits and SVAs
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- 1 TVC for Ads Sales Finance to help on tracking and reporting on UAC credits and SVAs
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-
- 2 TVCs for one for each APAC and Cloud Controllershship to operationalize GCP credits in APAC and workaround incremental and manual tax invoicing

X-PA Finance Recommendation and Considerations

Recommendation:

-
- X-PA (Play, Cloud, Ads, YT, Marketing) Finance teams are **overall supportive** of both proposals with the following caveats and recommendations:

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Ads Finance:

- 1.
2. UAC Credits of [REDACTED] are a one time approval that needs to come back to BC in one year when we know more and can have a discussion on whether to extend, stop, or change it
- 3.
- 4.
5. there is a governance model or committee to review all grants of Ads Credits to ensure grants do not exceed [REDACTED] of UAC Game Launch campaign and these larger grants do not distort auctions and relationships
- 6.
- 7.
8. Implement guardrails to ensure there is no double dipping of UAC incentives across Top Dev Support & DVIP.
- 9.
- 10.
11. Max of [REDACTED] of Ads Credits used in a given quarter to prevent impact to the auction.

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○ **Marketing Finance:** As part of the agreed phased approach to Mobile eSports, incorporate learnings and design the following mitigations for: 1) execution risk: specific to current operator (VSPN) capabilities outside of China 2) stand-alone economics for eventual eSport gaming/events offering

Pros:

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- Potentially mitigate [REDACTED] in cumulative revenue and [REDACTED] in margin risk facing Play.
-
-
- More economic to Google (P&L Cost < value to Dev) and easier to pull back vs. writing large checks to Devs or cutting Play revenue share which with a permanent state if enacted.
-
-
- An important step towards “One Google” go-to-market approach with opportunity to boost x-PA product adoption.
-
-

- Although not guaranteed and hard to quantify, positive sentiment established with game developers will not only help Play build deeper relationship with developer community and establish a strong Google Brand but will benefit YouTube's and Ads gaming ecosystem.
-
-

Cloud Finance:

-
-
-
- **Positive impact on GCP P&L** (Revenue & GM), driven by:
-
-

-
- **Short-term (2020-2022):** Revenue transfer from Play to Cloud (for [REDACTED] of credits value due to bundling of services per ASC 606 principals).
-

- **Long-term (2023+)** GCP incremental revenue (credits accelerate time to market; clients spend more on GCP after the credits are consumed, as workloads are "sticky"; initial wins can create a halo effect).
-
-

Media and Entertainment /Gaming is a priority vertical for Cloud

-
-
- *FYI on mitigating the GCP Revenue **cannibalization risk**: for existing commit accounts (example: Nintendo,)- credits can't be consumed, until the committed spend has been achieved [risk: this limits the value of the credits for the developer]*
-
-

YT Finance:

-
-
-
- Mobile gaming is growing fast on YouTube [REDACTED] [REDACTED] similar past deals with game pubs (like Kings Cup) have proven popular with game publishers, content creators, and users
-
-
- With +2 HC, Hug enables YT to manage smaller game publishers than we would otherwise prioritize in our partnerships org

Cons:

-
- Developer Service packs: when viewed as stand-alone Ads, YouTube and Cloud offerings would have low or minimal monetization ROI for Ads and YouTube and Cloud would likely structure it differently (e.g. less concentrated credit grants across more developers, credits as a smaller share of developer GCP spend, etc).
-
-
-
- Although PA's would not otherwise prioritize investment in these deals if on their own, this is a step towards "One Google" go-to-market approach that top customers have been asking for. This program is critical to Play revenue retention, making it important for Play/ Google.

-
-
- Potential risk of setting precedence and increases the risk of other developers/large UAC/DVIP advertisers GCP spenders or YouTube Minimum Guarantee deals asking similar credits/benefits/rev shares vs. standard practices.
-
- Operational complexity and execution risk:
-
-
-
- Cloud Finance: **Operational complexity - Sales quotas and attainment:** to give an incentive for sales reps to help clients consume the Play credits, we will need to set quotas and measure attainment/commissions on gross Revenue (incl. the credits). This exception will drive complexity and accuracy risk. We will need support from Play teams to make this work
-
-
- Marketing Finance: Moderate execution risk given need to hire and ramp HC and operational, X-PA (e.g. YouTube) dependencies
-
-
- Ads Credits of [REDACTED] will not impact auction providing:
-
-
-
- UAC growth maintains 2019 forecast. If growth decelerates substantially below forecast there is risk of impact to the Auction.
-
-
- No more than [REDACTED] of credits are utilized per quarter

Questions for deal team:

-
- Recommend supporting the program only through 2020 across all four service packs, with the sole exception of the GCP credit program, which is a 3-yr program (to help achieve higher win-rate on GCP). At the end of 2020, the team should revisit the program success and come back to BC on whether to renew/revise the offering.
-
-
- How real is the risk of contagion of this program beyond the 22 proposed developers (where other top devs want the same offer) and can it be managed effectively?
-
-
- If [REDACTED] lands, how does that impact our thinking about Top Dev Support program as the [REDACTED] opportunity looks to have greater economic value?
-
-
-
- **Finance Recommendation:** if [REDACTED] lands then Top Developer program should be reassessed at that time commensurate with the remaining risk and partnership needs in order to assess if the level of investment in this program needs to be adjusted

Mike Herring | Business Finance Officer | [REDACTED]@google.com | P&E, EP and G&A

REDACTED VERSION

Exhibit A26 to C. Cramer Declaration

EXHIBIT 40

Message

From: Adam Hoffeld [REDACTED]@google.com]
Sent: 8/24/2019 7:16:02 AM
To: Greg Hartrell ([REDACTED]@google.com]
CC: Lawrence Koh [REDACTED]@google.com]; Paul Feng [REDACTED]@google.com]
Subject: Re: xCloud - Google Play meeting at Gamescom

Yeah Lawrence, [REDACTED] mentioned you guys worked together at Kabam. Seemed like he knew you fairly well ;)

I of course asked about purchases and how they would work on Play, but he said he didn't know or couldn't share (just that you could buy at some point). Since you guys are initially aligned I'll try and set up another meeting with them in the next two weeks

Cheers,

Adam Hoffeld | Business Development, Google Play | [REDACTED]@google.com |

On Fri, Aug 23, 2019 at 10:46 PM Greg Hartrell <[REDACTED]@google.com> wrote:

Thanks for this update Adam. Aligned with your thinking Lawrence, I think it's worth spelling out the options that exist for them today (ideally with examples) so we're constructive.

+Paul Feng fyi - [REDACTED] seems like an important month for us to get the multiplatform story in place.

On Fri, Aug 23, 2019 at 1:44 PM Lawrence Koh <[REDACTED]@google.com> wrote:

Thanks for the update Adam. Didn't realize [REDACTED] ended up at [REDACTED] (I worked with him at Kabam).

Happy to take a meeting with him to discuss how the [REDACTED] app can launch on Play. Might be good to have the meeting before the preview app comes out so that we can get ahead of any announcements they make. I don't know too much about the product but assuming what I think it is, believe there are two options: make it solely consumption only on Play (ie stream/play games on your phone that you purchased on [REDACTED]) or integrate with our billing platform if the app allows mobile users to make transactions (ie buy games/IAPs).

On Fri, Aug 23, 2019 at 1:28 PM Adam Hoffeld <[REDACTED]@google.com> wrote:

I met with [REDACTED], Director of BD for [REDACTED], and while he wouldn't come out and say real details directly, he essentially wanted to know how we would work together (Play and [REDACTED]). He wouldn't share much details except to say it is a competitor to [REDACTED] and that is targeting mobile devices. He also stated he wanted to avoid the Epic/Fortnite situation (that they didn't come to Play). He either wants to completely avoid paying platform fees to Google Play or pay reduced platform fees.

He asked what our policies are around having [REDACTED] and some of the other stores are on Play and how they could work with those policies to ensure [REDACTED] is on Play.

I of course didn't share any info with him other than to say [REDACTED] as publicly stated by Sundar following the Epic announcement they wouldn't come to Play. This certainly is a pay grade above me, but passing along the info since you guys would have been in the meeting with them.

He also said he didn't have any details to share and that we could learn more in [REDACTED] when they have the preview. He requested another meeting to discuss with a broader team here, but I told him it doesn't make sense if he won't share more info.

Obviously happy to answer any questions you have, but he just wouldn't share much.

Cheers,

Adam Hoffeld | Business Development, Google Play | [REDACTED]@google.com |

On Fri, Aug 23, 2019 at 8:53 PM [REDACTED] wrote:

Hi Adam

It was great to meet up with you at Gamescom – thanks for your time – and I trust you extended Cologne stay is going well!

As discussed, I look forward to hearing back from you on your thoughts on the areas we should consider/may have bearing on our [REDACTED] app in development at this time, and that could have a bearing on our next more in depth meeting that is TBC.

Also per our conversation, we are looking to launch out Preview app in [REDACTED] on the Play Store - our app dev team have asked me if there is any help/guidance/early review resources available to assist with this?

Kind regards

| | |
| [REDACTED] |

--
Lawrence Koh
Google Play Games
[REDACTED]@google.com

cell:



REDACTED VERSION

Exhibit A27 to C. Cramer Declaration

EXHIBIT 41

ATTORNEY CLIENT PRIVILEGED

**Play update for Alphabet Board
Q2'2020**

State of the business

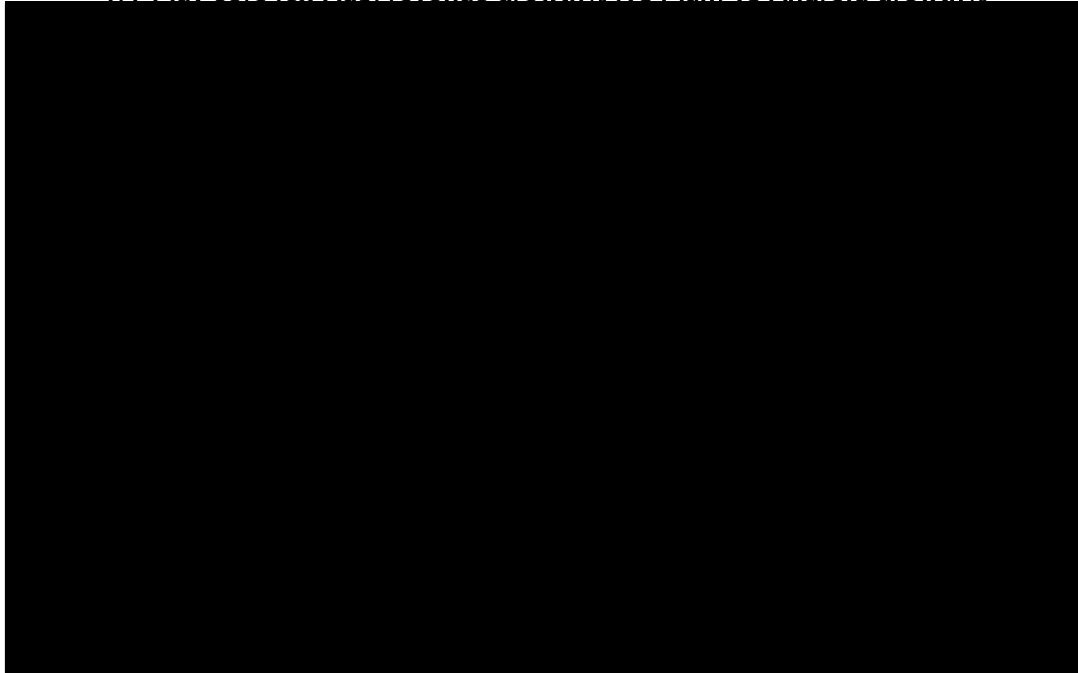
1H 2020 summary of Play performance



** Spend and Revenue data as of YTD (01/01 to 06/30), Revenue incl Core + Ads.*

Play continued to grow at [REDACTED] Y/Y (at plan) through Q1 and now [REDACTED] Y/Y in Q2 accelerated by shelter in place orders in many locales (combined [REDACTED] Y/Y 1H'20). For over 12 months, while Android growth has been flat/ declining, Play growth has come primarily from a combination of product improvements, strong developer base, promotions and merchandising in the Play Store and, more recently, shelter in place orders.

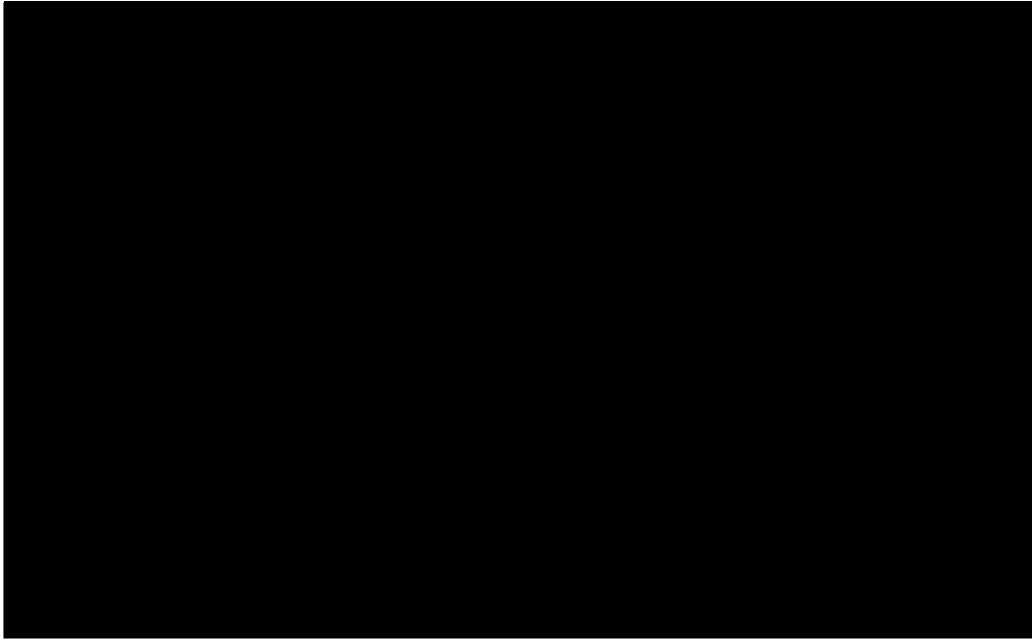
Y/Y Play core (ex-Ads) revenue growth% (vs Plan) vs Android growth%



Majority of the business and growth continues to come from in-app purchases in Apps & Games ([REDACTED] H1, [REDACTED] Y/Y growth). Movies and Books are also seeing a spike given shelter in place ([REDACTED] H1, [REDACTED] Y/Y growth). While Ads on Play are noted as [REDACTED], it is mostly driven by an automated shift of spend from Play to other properties (YouTube, Search, Web) by Google's Ad systems (App promo ads at the Google level are [REDACTED] QTD).

Play revenue breakdown vs plan 1H 2020

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Growth Drivers

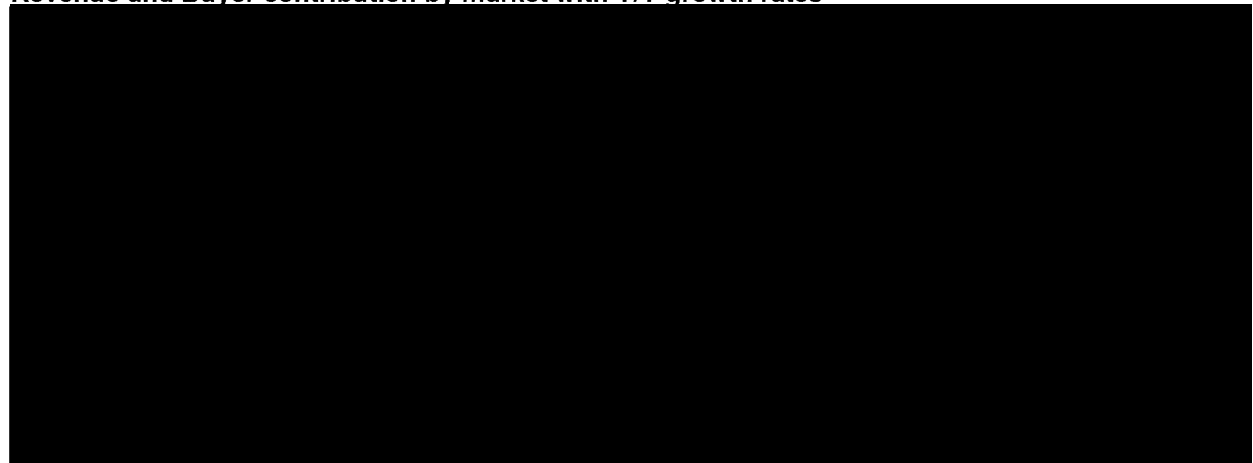
Growth has come from three major sources:

(1) Converting Play users of apps and games into buyers of in-app items.

Today, [REDACTED] of Play users make purchases on Play each month. We have viewed this as a source of opportunity to help both our developer partners and Google grow the business.

Mature markets contribute to [REDACTED] of Play's revenue with [REDACTED] of the buyers. We continue to deepen our buyer base in mature markets at [REDACTED] Y/Y. In addition, our efforts to drive new buyer growth in emerging markets is also paying off. Emerging markets contribute [REDACTED] of Play revenue with a revenue growth rate of [REDACTED] Y/Y. Further, emerging markets now account for [REDACTED] of Play buyers growing at [REDACTED] Y/Y.

Revenue and Buyer contribution by market with Y/Y growth rates



** Revenue and Buyers data as of YTD (01/01 to 06/30), Revenue excl Ads*

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[illegible]

(2) Retention and engagement in existing buyers.

Engaging existing buyers in developed markets has also been critical to growth. Top markets such as the [REDACTED] are performing well due to our efforts around amplifying key title launches and content moments (liveops), discovery of higher quality content and promotional campaigns. In addition, we launched the Play Points loyalty program last year in the developed APAC and US. Despite the strong buyer growth and buyer mix shift to emerging markets, overall Play ARPU has remained steady and even increased in some key geos like the US and KR.

More recently, shelter in place orders have accelerated growth as we have seen downloads increase significantly [REDACTED] from pre-COVID times and have launched a series of promotional campaigns designed to retain the first time buyers. However, we are seeing a softening of this growth as shelter in place orders are lifted in some geos.

(3) Partnering more closely with our developers

We have been actively working with our developers and have scaled our growth consulting efforts (1:1 consulting to optimize app or game performance) to cover over [REDACTED] titles in 2020 already [REDACTED] YoY) and helped our partners grow internationally. Of particular note here is [REDACTED] who has become the #1 grossing partner on Play with their top 5 markets being [REDACTED]. In aggregate, we have helped more devs build successful businesses on Play with over [REDACTED] partners making over [REDACTED], an [REDACTED] increase from 2018.

COVID-19 response

Play has taken a number of steps to support users during COVID but there are two major activities worth calling out:

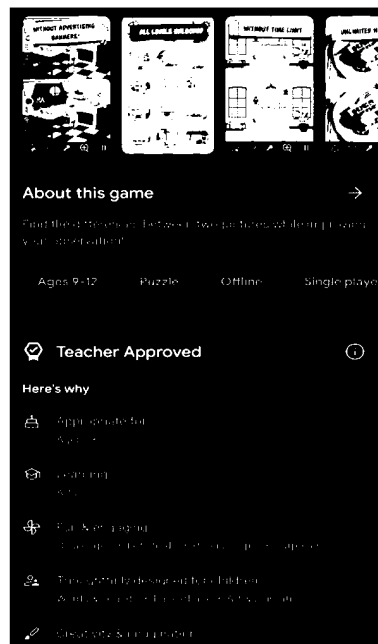
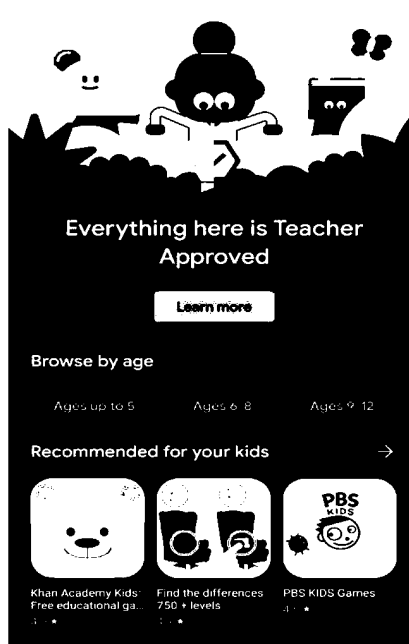
- **Contact tracing reviews and promotion:** Google and Apple's joint effort to provide COVID exposure notification APIs (project Apollo) is live in 10+ markets (e.g., Germany, Italy, Japan etc) with multiple other countries soon to follow. We have also increased trust & safety reviews of Apollo based and non-Apollo based contact tracing / exposure notification apps to ensure these do not become a vector for abuse.
- **Accelerated launch of the Family/Kids section of the Play Store:** With 60% of the world's student population out of school, we have seen a surge of parents seeking educational and entertaining content for children. To address this need we accelerated the launch of our new Family/Kids section of the Play store containing a new "Teacher Approved" rating system¹. Each app has been reviewed by teachers and categorized by age group to provide reference for parents-at-home use. This feature saw a significant performance improvements compared to other apps in the segment (usage time/install, uninstall rate)

Landing page

App details page

¹ Rolled out to English speaking markets today. Program is currently undergoing internationalization efforts for further WW rollout later in 2020

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Big Bets for 2020 and Beyond

Continued focus on User trust

A perceived Apple / iOS strength has been the safety and security of apps on the iOS platform and available through the App Store. Historically, Play had more permissive app publishing policies and more open Android APIs which has led to higher rates of content and malware abuse.

Over the last 24 months there has been a focussed effort across content quality improvement, malware detection and enforcement of policy. YTD for content violations we have stopped more than [REDACTED] bad apps from entering the Store, and cleaned up [REDACTED] apps on Play. Efforts like this steadily increased store compliance rate from [REDACTED]. Our investment in malware detection is paying off, with [REDACTED] more malware caught in 2019 (over previous year). In specific categories like Ad Fraud there is almost a [REDACTED] improvement - more than [REDACTED] in Ad Fraud through Ad Mob on play has been stopped in 2020 alone.

We also continue to rollout policy updates, on a quarterly basis, to ensure developers are not submitting apps that ask for sensitive permissions that are not appropriate for the use case of the app (e.g. Pizza delivery app asking to always track your location, even when the app is not in use). While progress has been made in this area, the team believes we still have a long way to go.

Cross Google deals (Games Velocity Program) with top game developers providing increased value to both Google and developers while easing developer agitation on Play's revenue share

Developers have been increasingly vocal about their concerns with platforms (iOS App Store, Google Play) charging 30% revenue share. We have found that, in gaming, the concerns over revenue share predominantly come from the largest players who have built significant businesses and are now focused on improving margins.

Thus far we have avoided altering our revenue share business model and instead have engaged this limited set of game developers [REDACTED] in cross-Google commercial deals to both build deeper relationships with these partners and reduce agitation around our 30% revenue share.

We have successfully rolled out a cross-Google commercial deal structure (Games Velocity Program) which provides qualifying developers a unified cross-Google "service packs" (across Play, Android, Ads, YouTube, Cloud), and enhanced consultative service, to drive better business outcomes for developers,

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while accruing value back to Google. In a typical deal, Play reinvests [REDACTED] of partners' consumer spend as credits spread across cloud, ads, co-marketing, YouTube & esports. Usually, Cloud credits scale with partner's revenue performance on Play, and Ads credit scale with partner's ad spend with Google.

We have signed [REDACTED] covering developers that make up [REDACTED] of annual Play spend and, so far, we are pleased with the results. We have seen cross-Google product adoption (e.g. [REDACTED]) and these developers have shifted their focus from arguing about revenue share and launching their games off of the Play store to discussions about how to mutually grow their business. We will continue to evolve this program in 2021+ to improve scale and efficiency. [REDACTED] *case study in Appendix 1.*

Securing our base through user lifecycle management and Loyalty

Our Play Points loyalty program is now live in 5 markets (JP, KR, US, TW, HK) and has been very successful [REDACTED] [REDACTED]). User engagement in these markets is strong [REDACTED] [REDACTED]). We plan to scale the program to reach nearly all HVUs* [REDACTED] of Play spend coming from members, and develop additional ways for non-HVUs to participate to achieve [REDACTED] enrolled members by the end of 2021.

* [REDACTED]

Moving gaming beyond Android mobile

Over the last several years we have seen traditional PC game developers bring titles to mobile for the first time. While this trend continues, we are also starting to see traditionally mobile game developers that want to distribute and have their games played on PC (desktop/laptop). Expanding game play from Android devices to Windows PC represents a major opportunity [REDACTED] global market for gaming on PCs) to expand our value proposition to users and developers as well as a chance to increase gameplay and Play revenue.

The Play team is currently working on a pilot of Android games running on Windows via emulation and are planning a launch in 2021. Early developer feedback is extremely encouraging, as they expect us to solve one of the largest challenges they face on PC - user acquisition and ad install conversion tracking.

Risks and challenges

Regulatory & Revenue Share pressure

We continue to experience heightened regulatory scrutiny with a drumbeat pressure across several countries. Examples include [REDACTED] [REDACTED]

Of particular concern is challenges being made and expected to be made around Play's ability to require a service fee for the sale of digital goods and use of its Billing services for apps selling those goods. Game developers like Epic and App developers like [REDACTED] have been vocal in their opposition.

We are working to ensure our policies around our business model and who needs to participate are clear and consistent, as an important step in explaining the model. We are currently working with developers to clarify and address their concerns around economics with a combination of cross-Google deals (discussed above) and other tiered programs. We expect to make public announcements around these policy clarifications in August.

Slowing/ Flattening Android growth

Android shipment share declined in Q1 2020 across most developed regions with continued strength of iPhone 11. \$400+ segment continues to be concerning in the highest monetization countries and Apple gained [REDACTED] points of shipment share in the US [REDACTED] [REDACTED] points in EEA [REDACTED] and [REDACTED] points in JP [REDACTED] in Q1 2020. COVID 19 shelter in place restrictions have resulted in [REDACTED] "missing new activations" and a slow down from OEMs in pushing letter updates, which affects Android

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freshness. These movements have not affected the Play business yet, however we are actively collaborating with the Android teams to mitigate long-term risks.

Appendix 1 - GVP deal example [REDACTED]

[REDACTED] was preparing to bring [REDACTED] to mobile for the first time in 2019. They told us they were considering not distributing on Play due of Play revenue share and value concerns. We worked across teams, including offering several cross-Google "service packs", to demonstrate and increase the value of partnering with Play and Google.

[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

REDACTED VERSION

Exhibit A28 to C. Cramer Declaration

EXHIBIT 42

Message

From: Dan Song [REDACTED]@google.com]
Sent: 5/2/2020 1:38:23 AM
To: Doreen Chou [REDACTED]@google.com]
CC: Ryan Wyatt [REDACTED]@google.com]; Adam Hoffeld [REDACTED]@google.com]; Lester Chen [REDACTED]@google.com]; Ines Cha [REDACTED]@google.com]; Lawrence Koh [REDACTED]@google.com]
Subject: Re: Mana pre-read slides and today's agenda

Thanks Ryan and Doreen and Lester for the teamwork :)

Ryan, three FYIs:

- [REDACTED] **back in the mix again**; so thanks for raising yesterday and pinging Lawrence yesterday. Purnima's words just now: "I want to make sure we do what we can to protect this budget for both Hug 1.0 and 2.0 [REDACTED]"
 - **Boubou and Play product signed off on product-side plan** as well, though flagging off course execution risk if product timelines are drawn out
 - Just learned Play **Finance cannot let us use [REDACTED] as an upfront** over [REDACTED] years; each expense must be funded and accounted for on calendar year basis. Also, to complicate things, [REDACTED] **GVP has a [REDACTED]** [REDACTED] **HOWEVER, Lester and we've a proposed solution** -
 - Still go in with an upfront content acquisition cost per year, say [REDACTED] / year for global YT exclusive rights + sponsor, for a total of [REDACTED] over [REDACTED] years
 - If [REDACTED] does not hit performance target for past 12 months, and warrants only [REDACTED] in esports, we claw back from the original [REDACTED] CAC
 - If [REDACTED] overperforms, we put the overflow funds into Mana 1P Creator events featuring [REDACTED], or to product
- For next steps, if Mana and [REDACTED] approved by Fri May 8, suggest Doreen/Lester can reach out asap to both [REDACTED] and [REDACTED] to get a lay of the licensing land.

Dan Song | Partnerships, Google Play Games | [REDACTED]@google.com | [REDACTED]

On Thu, Apr 30, 2020 at 7:56 PM Doreen Chou <[REDACTED]@google.com> wrote:
 +1 to Ryan and thanks for the tremendous amount of effort you have put in driving this, Dan and Adam!

On Fri, 1 May 2020 at 11:54, Ryan Wyatt <[REDACTED]@google.com> wrote:
 Great work on this! It's all very exciting.

On Thu, Apr 30, 2020 at 3:51 PM Dan Song <[REDACTED]@google.com> wrote:
 Hi Ryan,

For reference as part of today's chat - look fwd to catching up.

- Mana Steerco WIP slides
- Meeting goals
 - Decide on [REDACTED] approach for [REDACTED] as part of GVP

- Decide on [REDACTED] approach -> may be touch given covid prioritization and [REDACTED] Hug status right now; but can discuss
 - Quick look at overall strategy and events for feedback
- Thanks-

Dan Song | Partnerships, Google Play Games | [REDACTED]@google.com | [REDACTED]

REDACTED VERSION

Exhibit A29 to C. Cramer Declaration

EXHIBIT 43

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Page 1

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE GOOGLE PLAY STORE Case No.
ANTITRUST LITIGATION 3:21-md-02981-JD

THIS DOCUMENT RELATES TO:

Epic Games Inc. v. Google LLC, et al.,
Case No: 3:20-cv-05671-JD

In re Google Play Consumer
Antitrust Litigation,
Case No: 3:20-cv-05761-JD

In re Google Play Developer
Litigation,
Case No: 3:20-cv-05792-JD

State of Utah, et al., v.
Google LLC, et al.,
Case No: 3:21-cv-05227-JD

HIGHLY CONFIDENTIAL UNDER THE PROTECTIVE ORDER
VIRTUAL VIDEOCONFERENCE VIDEO-RECORDED
DEPOSITION OF LAWRENCE KOH

Thursday, December 9, 2021
Remotely Testifying from San Francisco, California

Reported By:

Hanna Kim, CLR, CSR No. 13083

Job No. 4969626

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Page 2

UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

IN RE GOOGLE PLAY STORE Case No.
ANTITRUST LITIGATION 3:21-md-02981-JD

THIS DOCUMENT RELATES TO:

Epic Games Inc. v. Google LLC, et al.,
Case No: 3:20-cv-05671-JD

In re Google Play Consumer
Antitrust Litigation,
Case No: 3:20-cv-05761-JD

In re Google Play Developer
Litigation,
Case No: 3:20-cv-05792-JD

State of Utah, et al., v.
Google LLC, et al.,
Case No: 3:21-cv-05227-JD

HIGHLY CONFIDENTIAL UNDER THE PROTECTIVE
ORDER, virtual videoconference video-recorded
deposition of LAWRENCE KOH, taken on behalf of the
stipulations of counsel thereof, remotely
testifying from San Francisco, California, on
Thursday, December 9, 2021, beginning at * a.m.,
and ending at * p.m., before Hanna Kim, CLR,
Certified Shorthand Reporter, No. 13083.

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Page 3

1 REMOTE VIDEOCONFERENCE APPEARANCES OF COUNSEL:

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4 Epic Games, Inc. v. Google LLC, et al:

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7 BY: DANIEL OTTAUNICK, ESQ.

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14 Counsel for the Proposed Class In Re: Google
15 Play Developer Antitrust Litigation and Pure
16 Sweat Basketball, Inc:

17 SPERLING & SLATER P.C.

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Page 5

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Page 6

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13 O'MELVENY & MYERS

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15 BY: KURT BROWN, ESQ.

16 BY: RAHUL KOHLI, ESQ.

17 1625 I Street, N.W.,

18 Suite 10

19 Washington, D.C. 20006

20 202.383.5300

21 bbradshaw@omm.com

22
23 Also Present:

24 GEOFF MINGER, Videographer

25 BOB BRASCH, Concierge

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Page 17

1 LAWRENCE KOH,
2 having been administered an oath over
3 videoconference, was examined
4 and testified as follows:

6 EXAMINATION

7 BY MS. MOSKOWITZ:

8 Q. Good morning, Mr. Koh. As you heard, my
9 name is Lauren Moskowitz, and I represent Epic
10 Games, and I'll be starting the questioning this
11 morning.

12 Thank you for being here.

13 Can you just please state your full name
14 again for the record.

15 A. My name is Lawrence Koh.

16 Q. And what is your address?

17 A. I currently reside -- do you want the full
18 address?

19 Q. You can tell me the -- the city and state.

20 A. City, state, okay. Yeah, I currently
21 reside in Lafayette, California.

22 Q. And where are you located at the moment?

23 A. I'm in downtown San Francisco, California.

24 Q. You are at your counsel's offices?

25 A. That is correct.

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1 I -- I do not know if he was the one that
2 authored this one, but yeah, I -- this is -- I -- I
3 have no recollection of these scenarios and
4 options.

5 BY MS. GIULIANELLI:

6 Q. Did [REDACTED] and Google enter into a -- a
7 Project Hug deal?

8 A. During my time there, we were not able to
9 get into an agreement.

10 Q. Do you know if Google has been able to
11 enter into an agreement since you left?

12 A. No, I have had zero visibility into Google
13 Play's business.

14 Q. Going back to Project Hug, we talked about
15 this a -- a -- a little bit earlier today,
16 [REDACTED], but I want to talk a little bit
17 about that.

18 One goal of Project Hug was to prevent
19 developers from striking better deals with
20 competing stores than with Google; right?

21 MR. BRADSHAW: Object to form.

22 THE WITNESS: I -- I would reframe that as
23 the -- the goal was to ensure that developers were
24 prioritizing Google Play when they were thinking
25 about launching a new game or a major new content

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1 update.

2 BY MS. GIULIANELLI:

3 Q. And by prioritizing, that means that
4 developers were [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 MR. BRADSHAW: Object to form.

8 THE WITNESS: Yes, that is correct.

9 BY MS. GIULIANELLI:

10 Q. Project Hug's terms [REDACTED]
11 [REDACTED]; right?

12 A. Project Hug just asks [REDACTED]
13 [REDACTED]

14 Q. Project Hug [REDACTED]
15 [REDACTED] right?

16 MR. BRADSHAW: Object to the form.

17 BY MS. GIULIANELLI:

18 Q. Let me -- let me rephrase that.

19 The terms of Google's Project Hug
20 agreements [REDACTED]

21 [REDACTED]; right?

22 MR. BRADSHAW: Same objection.

23 THE WITNESS: As long as it wasn't
24 something that was part of the -- we -- what we
25 define [REDACTED]

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BY MS. GIULIANELLI:

9

10

11

Q. And as we discussed earlier today, Hug was set up to secure this [REDACTED] for top titles from the top developers, right?

12

A. Yes, that is correct.

13

14

15

16

17

Q. And we went through some of the different places earlier today that these Project Hug dis- -- distributors might distribute their applications. One of them was the potential for them distributing through Samsung's Galaxy Store.

18

Do you remember that?

19

A. Yes, I do recall that.

20

21

22

Q. Do you recall that Google thought Samsung was looking to strike deals for exclusive or unique content with some of the large developers?

23

24

A. There were concerns that Samsung might potentially incentivize developers to [REDACTED]

25

HIGHLY CONFIDENTIAL

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1

2 Q. That's one way that Samsung might have
3 competed with the Play Store; right?

4

A. Yes, that is correct.

5

6

Q. For those developers that have entered
into Project Hug agreements with Google, [REDACTED]
7 Galaxy Store can no longer get this unique content
8 in order to compete with Google; true?

9

MR. BRADSHAW: Object to the form.

10

THE WITNESS: [REDACTED]

11

12

13

14

15 BY MS. GIULIANELLI:

16

Q. That was one of the [REDACTED] that you've
17 talked about; right?

18

A. That is correct.

19

Q. For the most part, [REDACTED]

20

21

22

23

MR. BRADSHAW: Object to the form.

24

THE WITNESS: Again, [REDACTED]

25

[REDACTED] developers can choose

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1 to seek something that is very custom for Samsung
2 or vice -- or in other ways, we've seen developers
3 ask us by w [REDACTED]

4 [REDACTED]

5 [REDACTED]

6 [REDACTED]

7 [REDACTED]

8 [REDACTED]

9 [REDACTED]

10 [REDACTED]

11 BY MS. GIULIANELLI:

12 Q. Excuse me. I'm going to -- I have a --
13 I'm going to take one break because I have a loud
14 vacuum cleaner in our office building outside. I
15 need to stand up and close my door.

16 THE VIDEOGRAPHER: Okay. Off the record?

17 THE WITNESS: Okay.

18 MS. GIULIANELLI: Yeah.

19 THE VIDEOGRAPHER: We're going off the
20 record at 7:11 p.m.

21 (Off the record.)

22 THE VIDEOGRAPHER: This is Media Number
23 12, and we are back on the record at 7:26 p.m.

24 BY MS. GIULIANELLI:

25 Q. As a result of Project Hug, Samsung could

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2

3

MR. BRADSHAW: Object to form.

4

5

THE WITNESS: Yes, so the -- the
developers that agreed to Project Hug, those
developers

6

7

8

9

BY MS. GIULIANELLI:

11

12

Q. That reduced the risk of Samsung competing
with Google in application distribution; right?

13

14

15

16

MR. BRADSHAW: Object to the form.

17

BY MS. GIULIANELLI:

18

19

Q. It mitigated Google's risk of losing out
to competition from Samsung in this instance?

20

21

22

A. In that specific instance, example, yes.

Q. Or of losing out to any competition;
right?

23

24

25

A. That is correct.

(Interruption in audio/video.)

Did everyone hear that?

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1 THE COURT REPORTER: Yes.

2 MS. MOSKOWITZ: We did, we did.

3 BY MS. GIULIANELLI:

4 Q. As of the time that you left Google,
5 Project Hug was working to keep the key developers
6 preferencing the Google Play Store; correct?

7 A. Project Hug was working in that all
8 developers that agreed to it were able to meet
9 the -- all the obligations to -- that we stated.

10 (Interruption in audio/video.)

11 THE COURT REPORTER: I'm sorry. There was
12 an interruption.

13 "Obligations to"...

14 THE WITNESS: Obligations that were in
15 Project Hug.

16 BY MS. GIULIANELLI:

17 Q. One of those obligations was [REDACTED]

18 [REDACTED]

19 A. It -- it was -- it was to [REDACTED] and
20 then also [REDACTED]

21 [REDACTED]

22 Q. After Project Hug, as of the time you left
23 Google, there was no developer, to your knowledge,
24 that was still pursuing starting its own store.

25 Is that fair to say?

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1 MR. BRADSHAW: Object to the form.

2 THE WITNESS: I was not aware of any
3 Project Hug developer pursuing a new Android
4 distribution platform.

5 BY MS. GIULIANELLI:

6 Q. We talked about -- strike that.

7 You -- you testified earlier today that

8 [REDACTED]
9 [REDACTED] was
10 to have NDAs.

11 What is an NDA?

12 A. It is a nondisclosure agreement.

13 Q. And a nondisclosure agreement means that
14 it's basically to be kept secret; right?

15 MR. BRADSHAW: Object to the form.

16 THE WITNESS: It is -- it is meant to be
17 just between the two parties that go into that
18 agreement.

19 BY MS. GIULIANELLI:

20 Q. Do you recall that after [REDACTED] and Google
21 reached a deal, [REDACTED] wanted to publicize it?

22 A. I do recall [REDACTED] wanting to talk about the
23 partnership, similar to the way the [REDACTED]
24 [REDACTED] Google partnership was announced earlier
25 in that year.

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CERTIFICATE OF DEPONENT

I have read the foregoing transcript of my deposition and except for any corrections or changes noted on the errata sheet, I hereby subscribe to the transcript as an accurate record of the statements made by me.

LAWRENCE KOH

SUBSCRIBED AND SWORN before and to me
this ____ day of _____, 20__.

NOTARY PUBLIC

My Commission expires:

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1 CERTIFICATE OF REPORTER

2 I, Hanna Kim, a Certified Shorthand
3 Reporter, do hereby certify:

4 That prior to being examined, the witness
5 in the foregoing proceedings was by me duly sworn
6 to testify to the truth, the whole truth, and
7 nothing but the truth;

8 That said proceedings were taken before me
9 at the time and place therein set forth and were
10 taken down by me in shorthand and thereafter
11 transcribed into typewriting under my direction and
12 supervision;

13 I further certify that I am neither
14 counsel for, nor related to, any party to said
15 proceedings, not in anywise interested in the
16 outcome thereof.

17 Further, that if the foregoing pertains to
18 the original transcript of a deposition in a
19 federal case, before completion of the proceedings,
20 review of the transcript [] was [] was not
21 requested.

22 In witness whereof, I have hereunto
23 subscribed my name.

24 Dated: 10th day



25 Hanna Kim, CLR, CSR No. 13083

FILE UNDER SEAL

Exhibit A30
to
C. Cramer Declaration

REDACTED VERSION

Exhibit A31 to C. Cramer Declaration

EXHIBIT 46

Defining Innovation Strategy Checkpoint 2

April 4, 2013

AGENDA FOR TODAY

During our last meeting we discussed:

- Lessons from the laptop industry
- Component trends

Questions we heard:

- Where is the mobile industry going?
 - Key price tiers
 - Growth by market
- What are the strategy choices/options for [REDACTED]/Google?

Key Discussion Topics for today:

1. Perspectives on mobile industry going forward
2. [REDACTED]/Google strategic choices/options
3. Lessons from camera + laptop industries
4. Next steps

- Next meeting
 - Technology strategy; framework
 - Corporate Strategy; supplier ecosystem

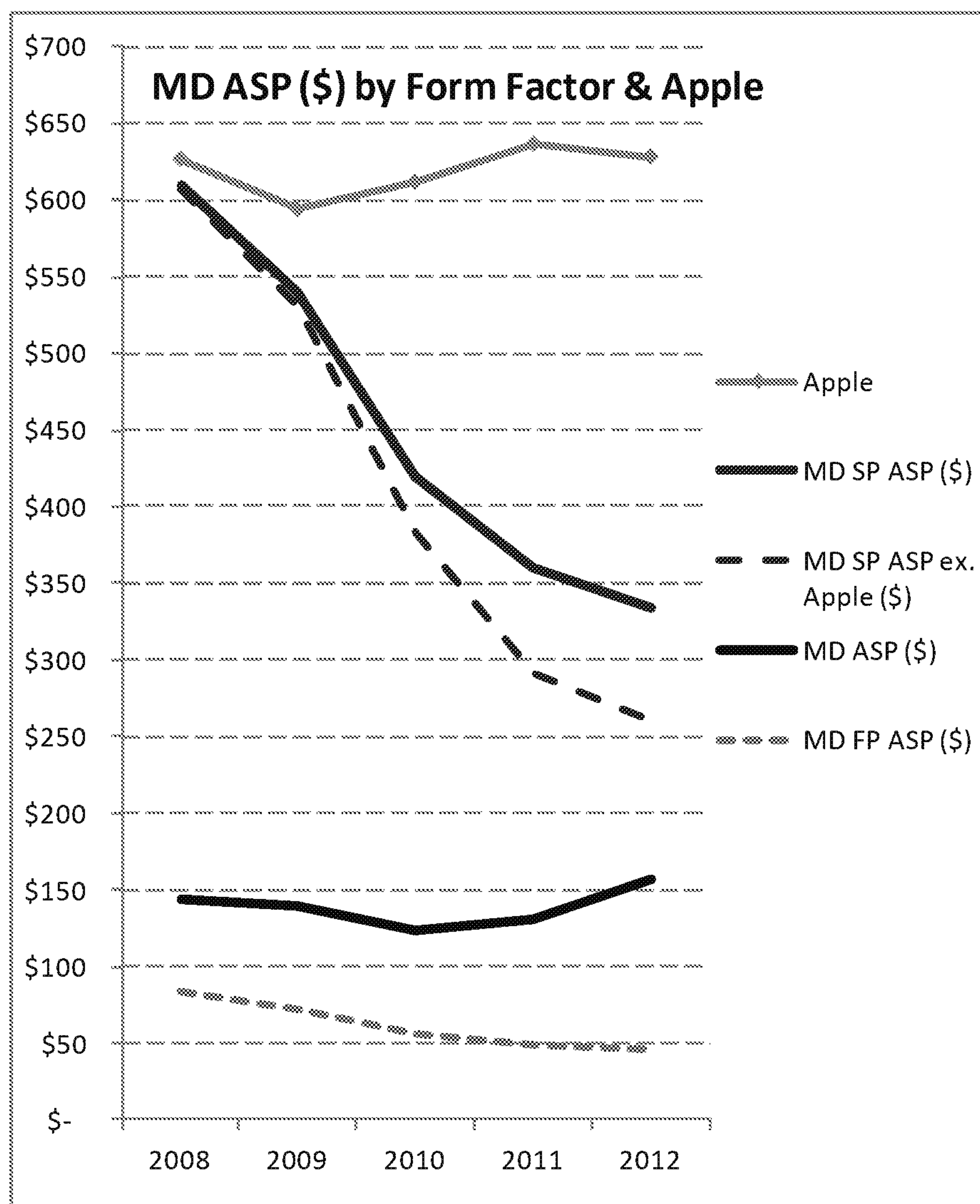
Executive Summary: Perspectives on Mobile Industry Evolution (1/2)

- **Market growth:**
 - Total opportunity of 1.8 billion units (more than total SPs sold since 2007), \$405 billion in revenue, and \$140 billion in profits over the next 2 years
 - Developed markets have reached feature phone like penetration (>70%), while emerging markets and lower price tiers in developed markets are still underpenetrated (<30%)
 - 70% of these units will come from price tiers below \$200 and 65% from emerging markets (China, India, LATAM, CEE, MEA)
 - Most of the OEM gross profits (56%) are in the high-end, and are likely to shrink in the future with price erosion
- **Price points:** Smartphone prices will decline at -9% YoY, driven by volume mix shifting to lower prices and emerging markets; price decline to be steeper in the lower tiers
- **High-tier, subsidized US/Japan/Korea/WE markets:**
 - High gross profit potential of \$65 bn (over the next 2 years), and 380 m units
 - While the segment is already mature for a commodization play, multi-year contract cycles and high carrier subsidies will mean "Wow" products and experiences will continue to drive the market and will be required to win in this market
- **High-tier and unsubsidized, US pre-paid and Emerging markets:**
 - Gross profit potential of \$43 bn, and 400 m units
 - This segment is susceptible to a commodization play since these markets are not supported by high subsidies
 - a strong, winner product in the US can lead to "halo" effect in this segment; however strong channel presence and disruptive financing models to lower upfront device costs required to move the market
- **Mid-low tier, retail driven WE, LATAM, China and India markets:**
 - High volume potential of 1 bn units, but limited gross profit potential from HW
 - This segment is and will be even more commoditized
 - Quality product at affordable sweet spot price (\$50-100), global scale in distribution and cost, and sustainable, disruptive models to lower TCO required to win in this segment

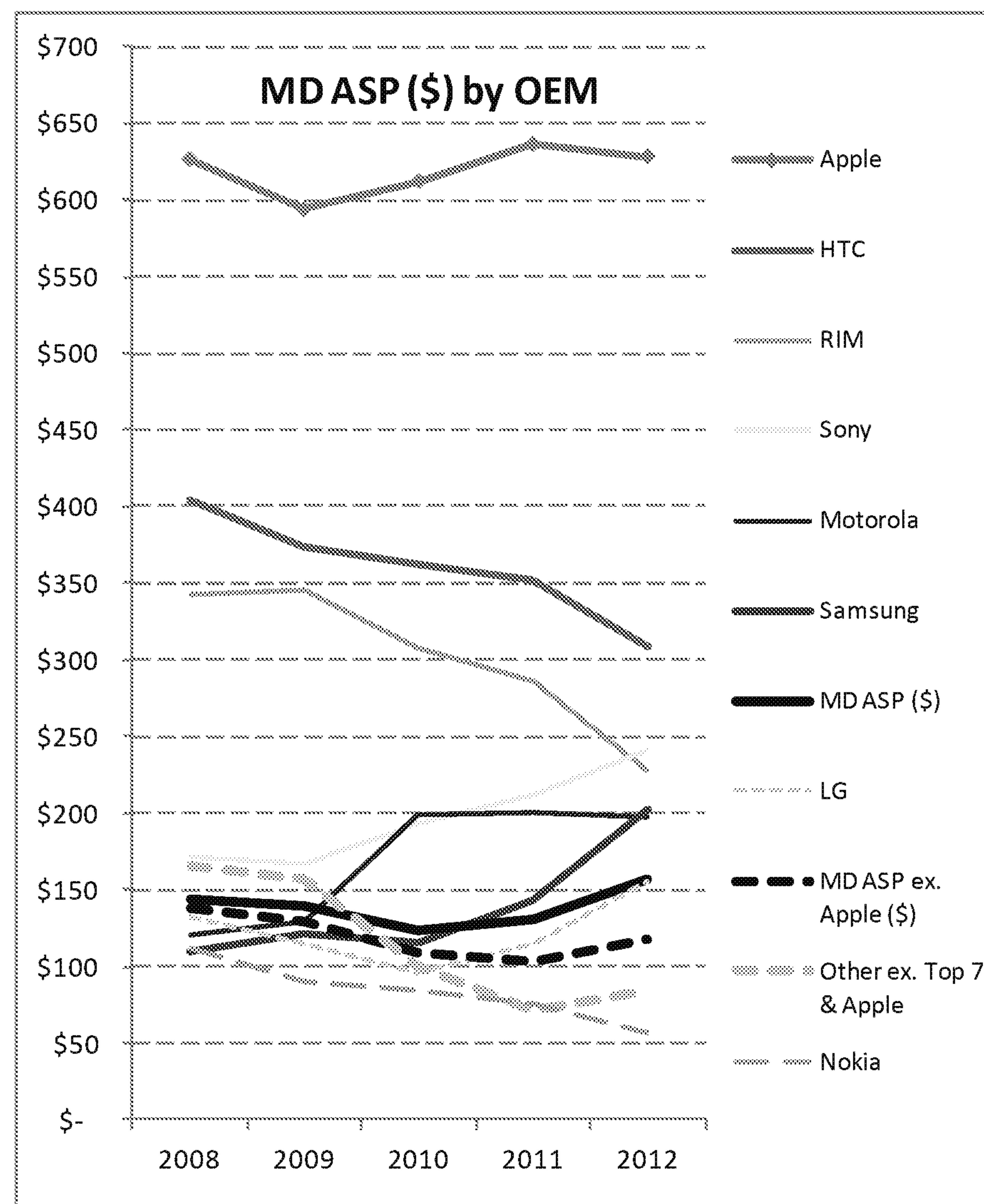
Executive Summary: Perspectives on Mobile Industry Evolution (2/2)

- **Operators:**
 - Tier-1 operators in developed markets to continue paying high device subsidies justified by high ARPUs and a large subscriber base locked in 2+ years contracts. Major unknown disruption could be no-contract plans
 - Tier-2 operators in developed markets will continued experimentation with no contract plans, and creative financing models
 - Emerging markets will continue to have a very competitive operator market, with low and likely declining ARPUs, very low (<20%) of locked post-paid customers, and high churn (>5%)
- **Channel structure:**
 - US, Japan, Korea and WE will continue to be carrier dominated markets
 - Emerging countries will have a retailers and distributors the key market makers
 - More OEM competitor presence in own or leased retail formats
 - Online channel adoption not likely to have any fundamental shifts
- **Samsung:**
 - Has built a \$15 bn profit/year machine, by building on Android, with ~\$2 billion marketing, vertically integrated model and strong channel presence across >100 countries
 - Samsung to integrate into SW services, through building own capabilities and through partnerships with services providers
 - Samsung's biggest vulnerability is another Android player offering a better experience at sustainable, lower price, since high end phones drive 70% of profits and 35 % of overall Samsung profits
- **Apple:**
 - Apple's model will likely not change, however without Steve Jobs as product visionary, Apple is vulnerable on its ability to keep innovating and maintain its brand and pricing in subsidized, carrier dominated markets
 - Very little innovation in last 2 years (Siri, thin design)
- **Google:**
 - Vulnerable to a "trojan horse" strategy by Samsung through: a "Siri" like engine that subjugates search, or a "PC like toolbar", or forking the Android code, or partnering with a services provider like FB
 - Google should move to an integrated H/W+S/W+Services model at high end
 - Free cost of Android will make it the choice for low-end phones, however Google needs to monetize this reach (e.g ad revenue)

Smartphone ASP Ex-Apple is declining at 19% CAGR during 2008-12

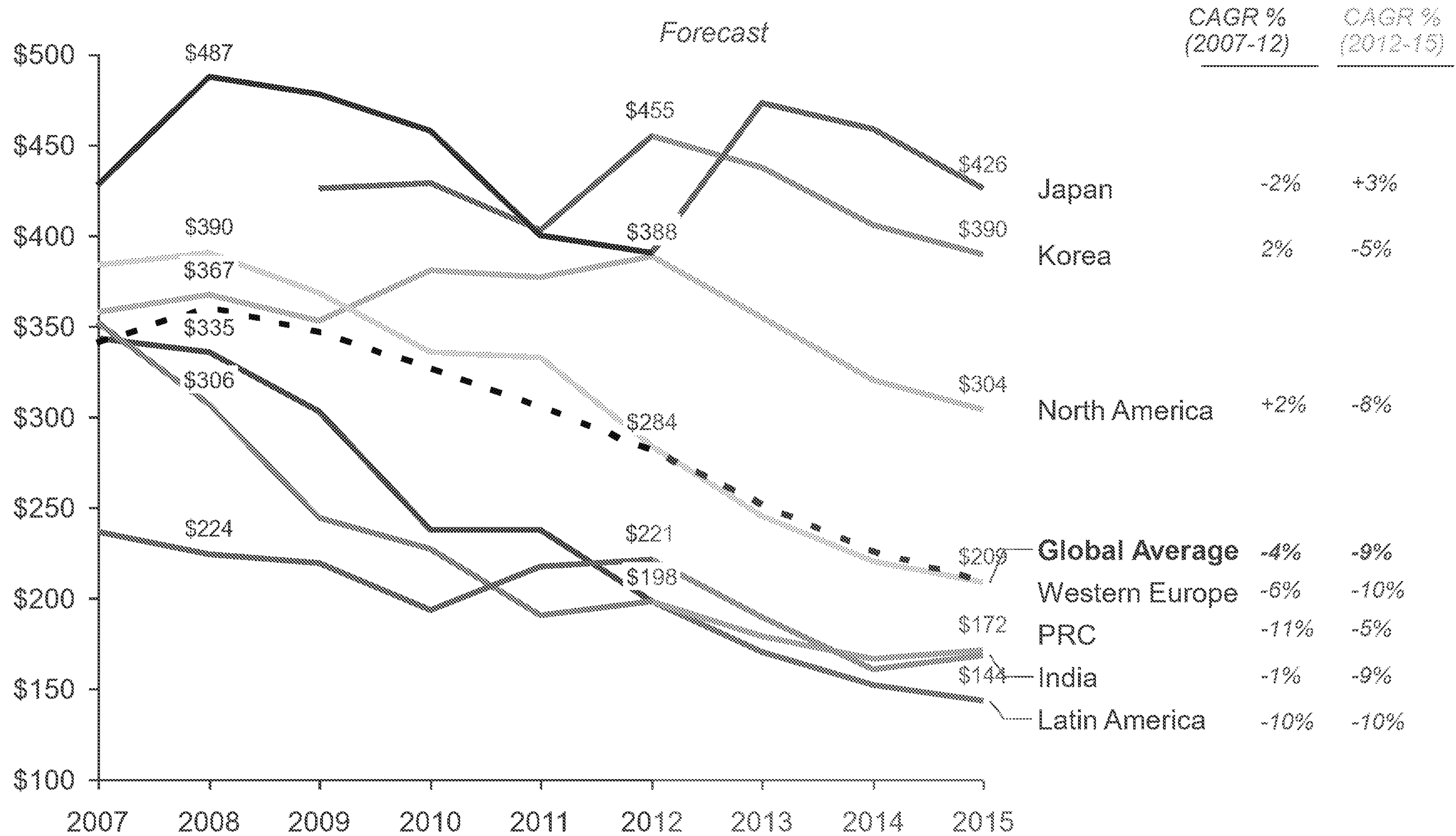


- Smartphone penetration lifting handset ASP @ +2.2% CAGR
- Smartphone and feature phone ASP declines @ -14% CAGR
- Smartphone ex.-Apple declining @ -19% CAGR



- Apple maintains ASP
- HTC, RIM, Nokia in steep decline
- Samsung, Sony, Motorola up with more SP mix

Smartphone ASPs outside Japan, Korea and NAM are Lower (likely driven by mix)



Source: Profit Pools MMI Strategy Group published July 2012

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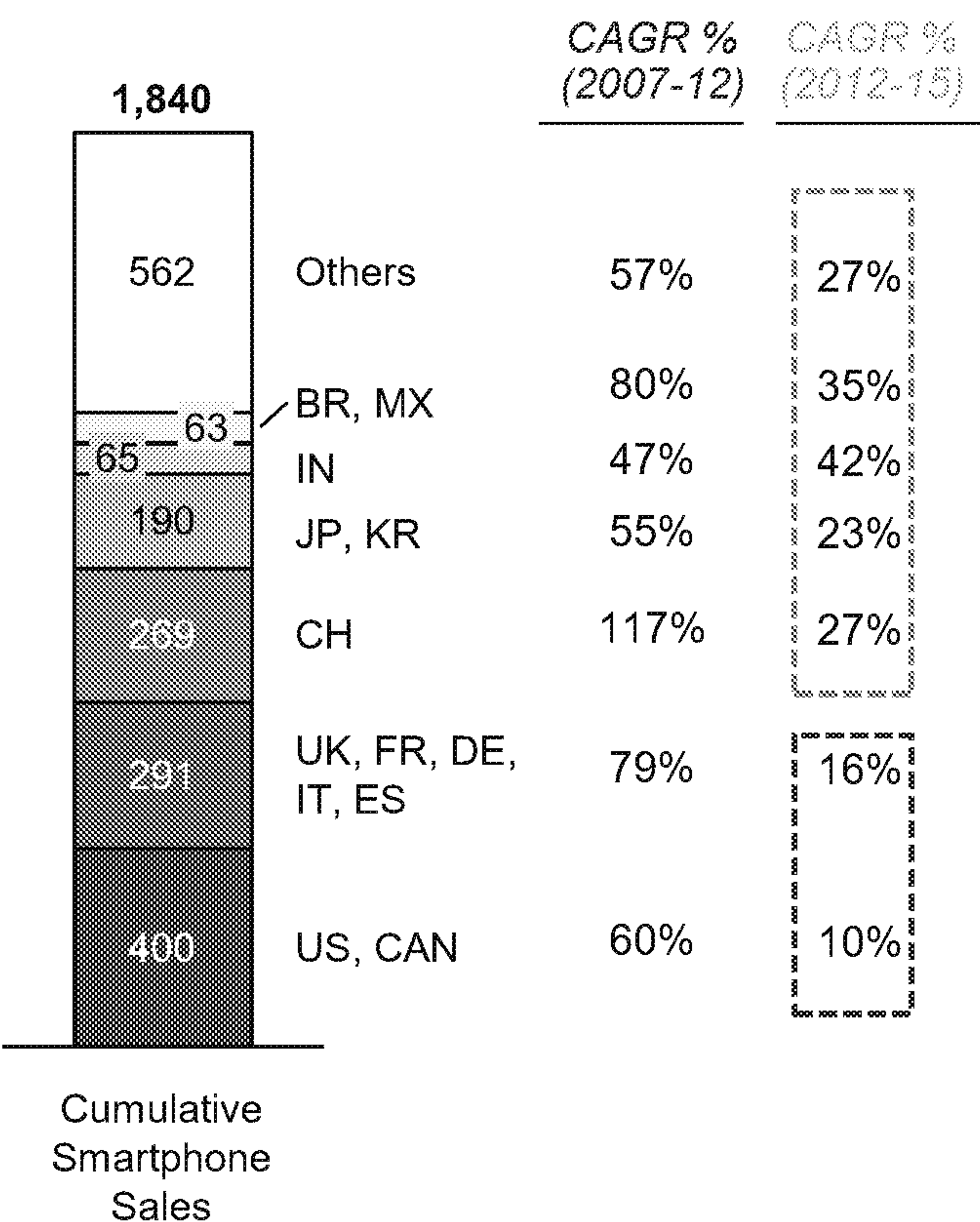
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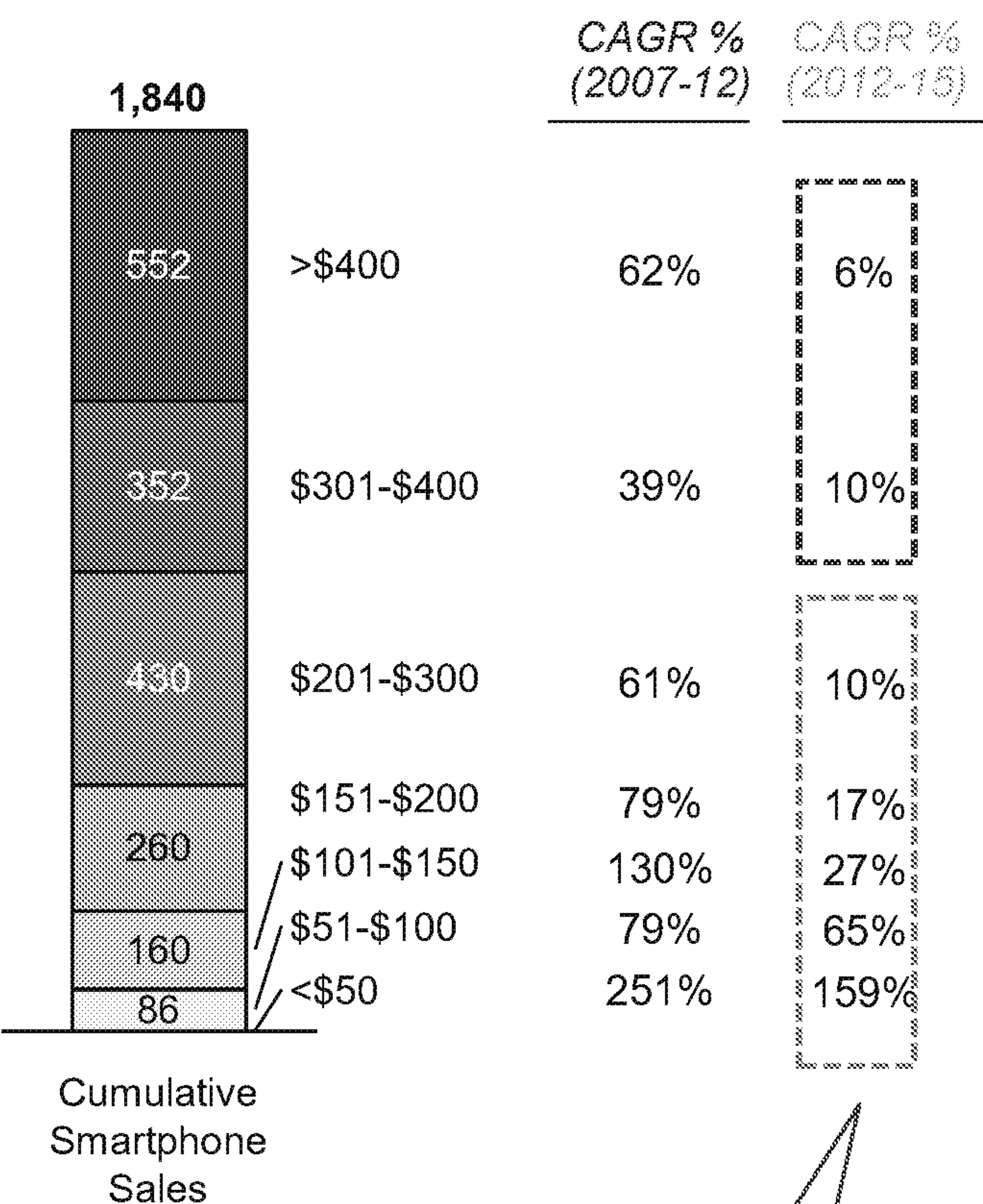
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Smartphone Growth thus far driven by Developed Markets and Higher Price Tiers; Cumulative 1.8 Billion Smartphones Sold since 2007

Global cumulative smartphone units by region (m Units)



Global cumulative smartphone units by price tier (m Units)

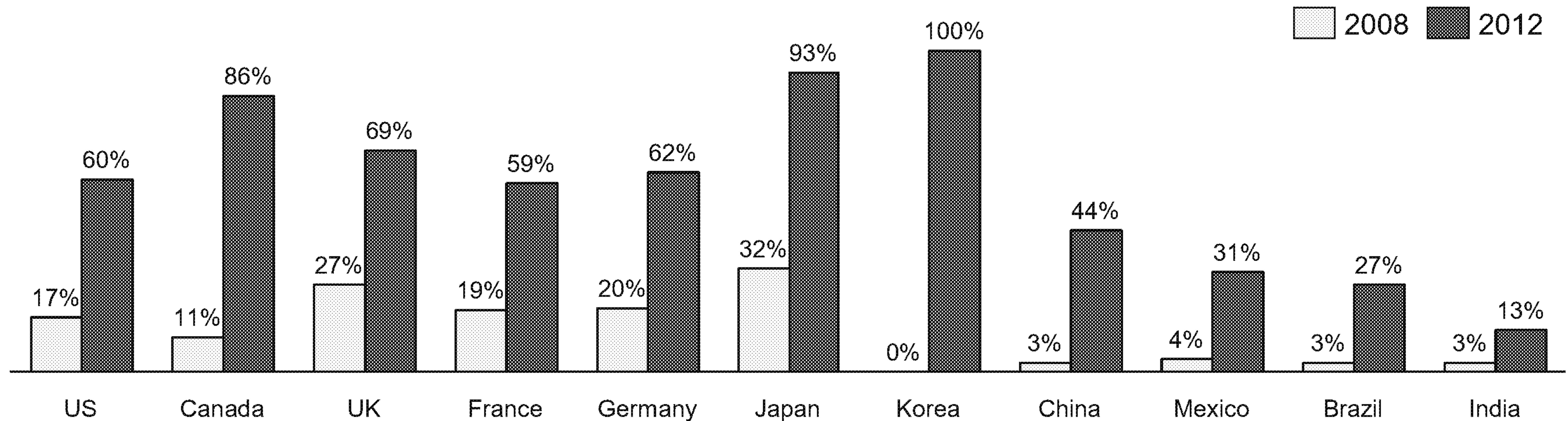


Driven by "late adopter" price-sensitive customers, likely to sacrifice certain features for price, and more basic functionality

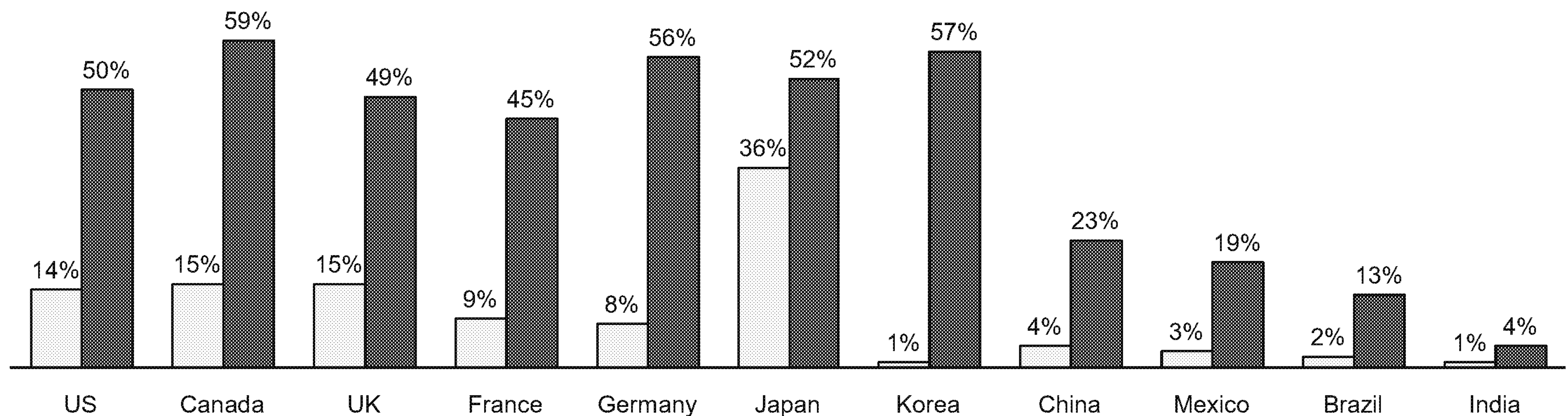
Source: Profit Pools MMI Strategy Group published July 2012

Smartphone Penetration in Developed Markets has Crossed 50% and Entering “Late Majority” Stage; Emerging Markets Severely Underpenetrated

Penetration of smartphones by current sell-in volume
(% of total phones)



Penetration of smartphones by installed base
(% of total phones)



Source: Strategy Analytics, Profit Pools Strategy Group published July 2012

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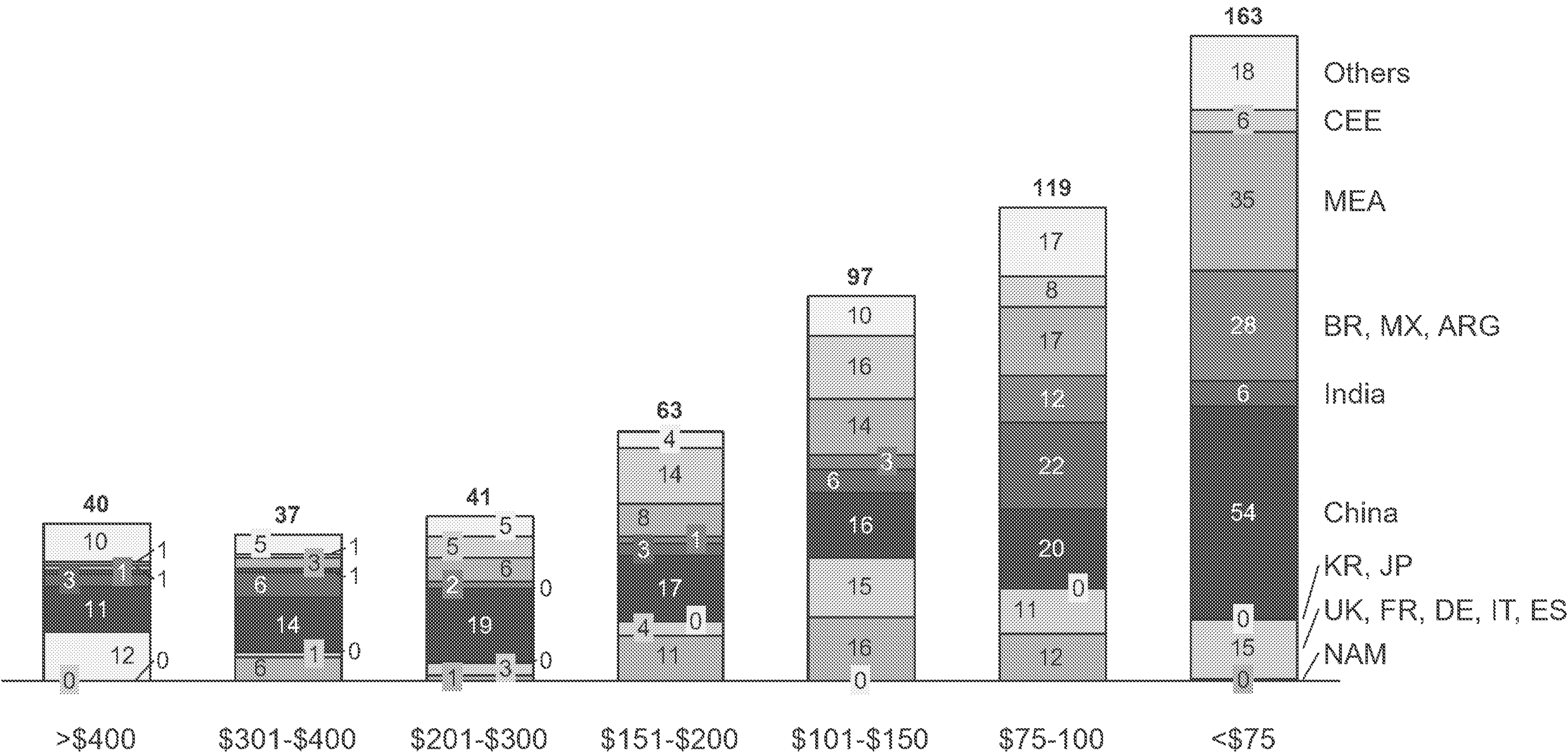
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Majority of Growth Estimated to Come from Lower Tiers and from China, India and LATAM

Incremental volume growth between 2012 and 2015 (M Units)

								TOTAL
Volume in 2012 (m units)	190	98	121	100	91	55	10	665 M
Volume in 2015 (m units)	224	130	160	163	188	174	172	1212 M
Average ASP in 2012	\$495	\$326	\$225	\$165	\$126	\$87	\$47	



Source: Profit Pools MMI Strategy Group published July 2012

Tier-1 Carriers in the US, Japan and Korea Pay High Subsidies Backed by High ARPUs, masking real price to consumers

Comparison of top carriers across key markets

	Carrier	Country	Total Subs (in M)	Country market share	% post-paid subs	% Sell-in SP penetration	ARPU (\$ / month)	Churn (%)	Annual subsidy (\$ M)	Subsidy as a % of Revenue
High: • ARPU • Post-paid • SP pen. % Low: • Churn	Verizon Wireless	US	113	34%	80%	53%	\$56	1.20%	\$6,932	11%
	AT&T Mobility	US	106	32%	66%	64%	\$65	1.30%	\$8,240	14%
	SprintNextel	US	56	17%	58%	73%	\$61	2.50%	\$4,685	16%
	Bell	Canada	8	29%	83%	60%	\$66	1.60%	Higher customer retention through long term contracts	
	Rogers Wireless	Canada	9	36%	83%	65%	\$72	1.70%		
	Telus Mobility	Canada	8	28%	85%	63%	\$62	1.40%		
	NTT DoCoMo	Japan	61	46%	100%	93%	\$62	0.80%		
	KDDI	Japan	36	27%	99%	92%	\$54	0.70%		
	Softbank	Japan	30	23%	97%	90%	\$52	1.10%		
Mid: • ARPU Low: • Post-paid • SP pen. %	T-Mobile USA	US	33	10%	71%	35%	\$50	3.40%	\$2,471	14%
	US Cellular	US	6	2%	68%	39%	\$54	2.00%	\$407	10%
	MetroPCS	US	9	3%	0%	47%	\$41	3.70%	\$452	10%
	Leap Wireless	US	6	2%	0%	47%	\$42	4.80%	\$294	10%
High: • Post-paid • SP pen. % Low: • ARPU	Everything Everywhere	UK	26	31%	51%	74%	\$30	2.30%	ARPU lower because of lowered data tiering (lowest available 250MB vs 2GB in the US)	
	Vodafone UK	UK	19	23%	56%	50%	\$33	2.90%		
	Orange France	France	27	37%	73%	59%	\$35	2.30%		
	T-Mobile Germany	Germany	36	32%	53%	62%	\$20	1.40%		
	Telefonica Moviles	Spain	21	39%	74%	54%	\$27	1.70%		
High: • Churn Low: • ARPU • Post-paid • SP pen. %	China Mobile	China	699	65%	21%		\$11	3.30%	CT with high % post-paid because of CDMA	
	China Unicom	China	229	21%	9%		\$8			
	China Telecom	China	153	14%	67%		\$8			
	Bharti Airtel	India	186	21%	4%	14%	\$3	8.50%	>\$400 tiers get ~90% of ASP as subsidy, but with longer contract duration	
	Vodafone Essar	India	153	17%	5%	15%	\$3	6.30%		
	Reliance	India	135	15%	3%	13%	\$2	10.00%		
	Telcel	Mexico	69	71%	12%	30%	\$14	3.60%	\$529	5%
	Vivo	Brazil	77	29%	23%	27%	\$11	3.60%	\$202	2%
	TIM Brazil	Brazil	69	26%	15%	39%	\$9	4.00%	\$151	2%
	Claro BR	Brazil	63	24%	20%	24%	\$7	3.40%	\$117	2%

Source: Strategy Analytics, Informa

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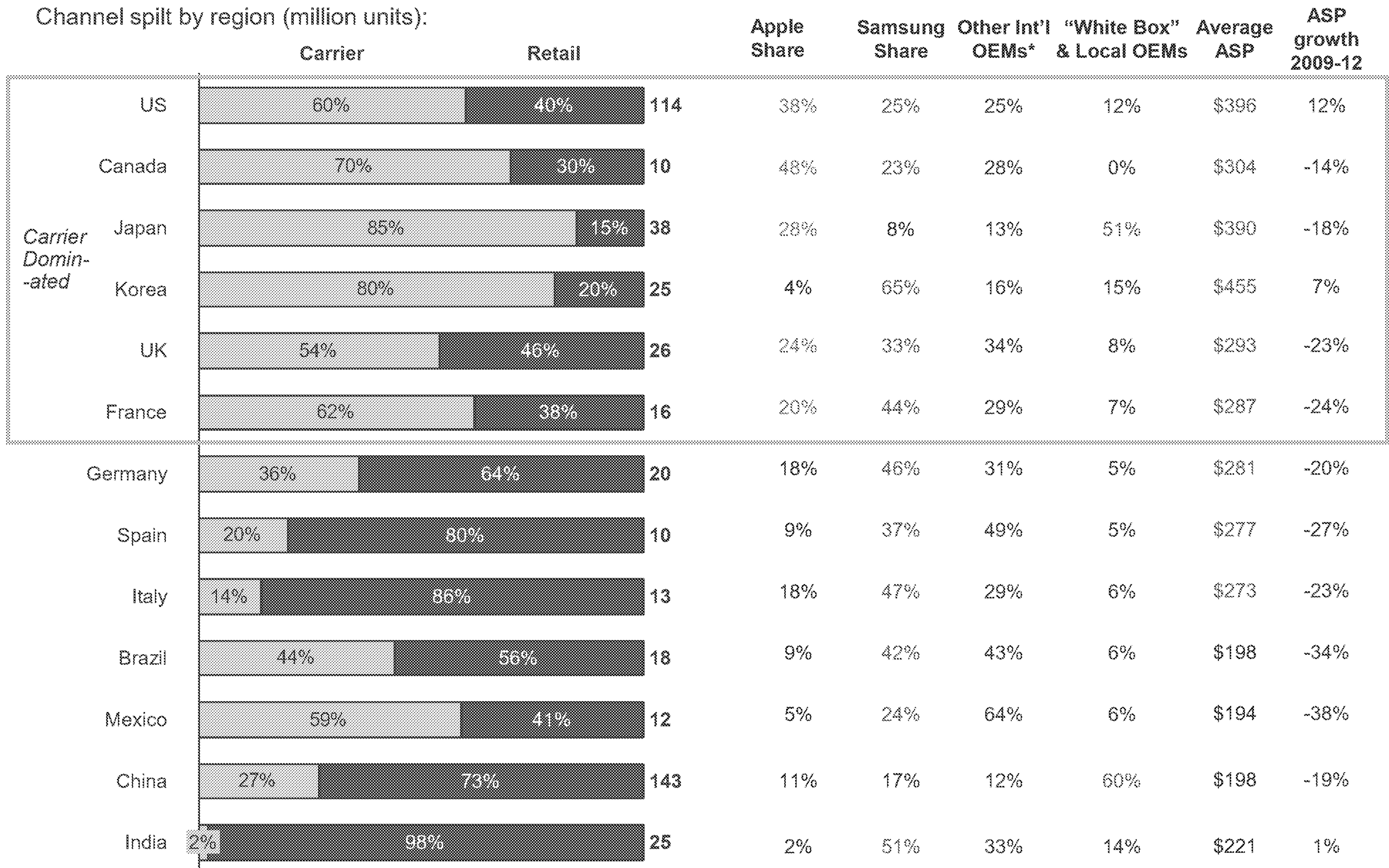
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Apple Mainly Successful in Carrier Dominated Markets with high ASPs; Samsung Leads in all Retail Driven Markets except China

Channel spilt by region (million units):



*Motorola, HTC, LG, Sony, Nokia, RIM

Source: MMI GTM team, Gartner, Profit Pools MMI Strategy Group published July 2012,

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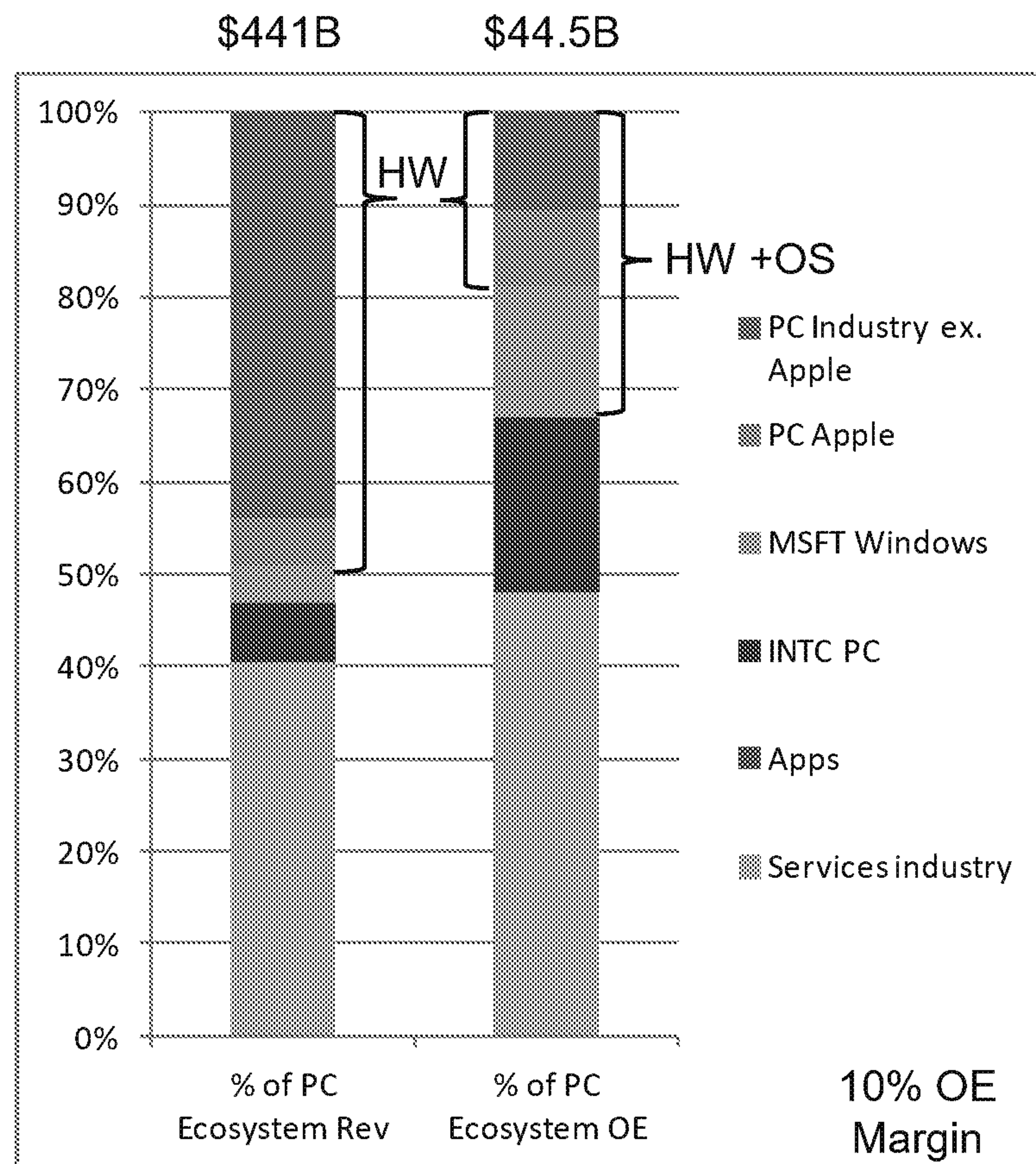
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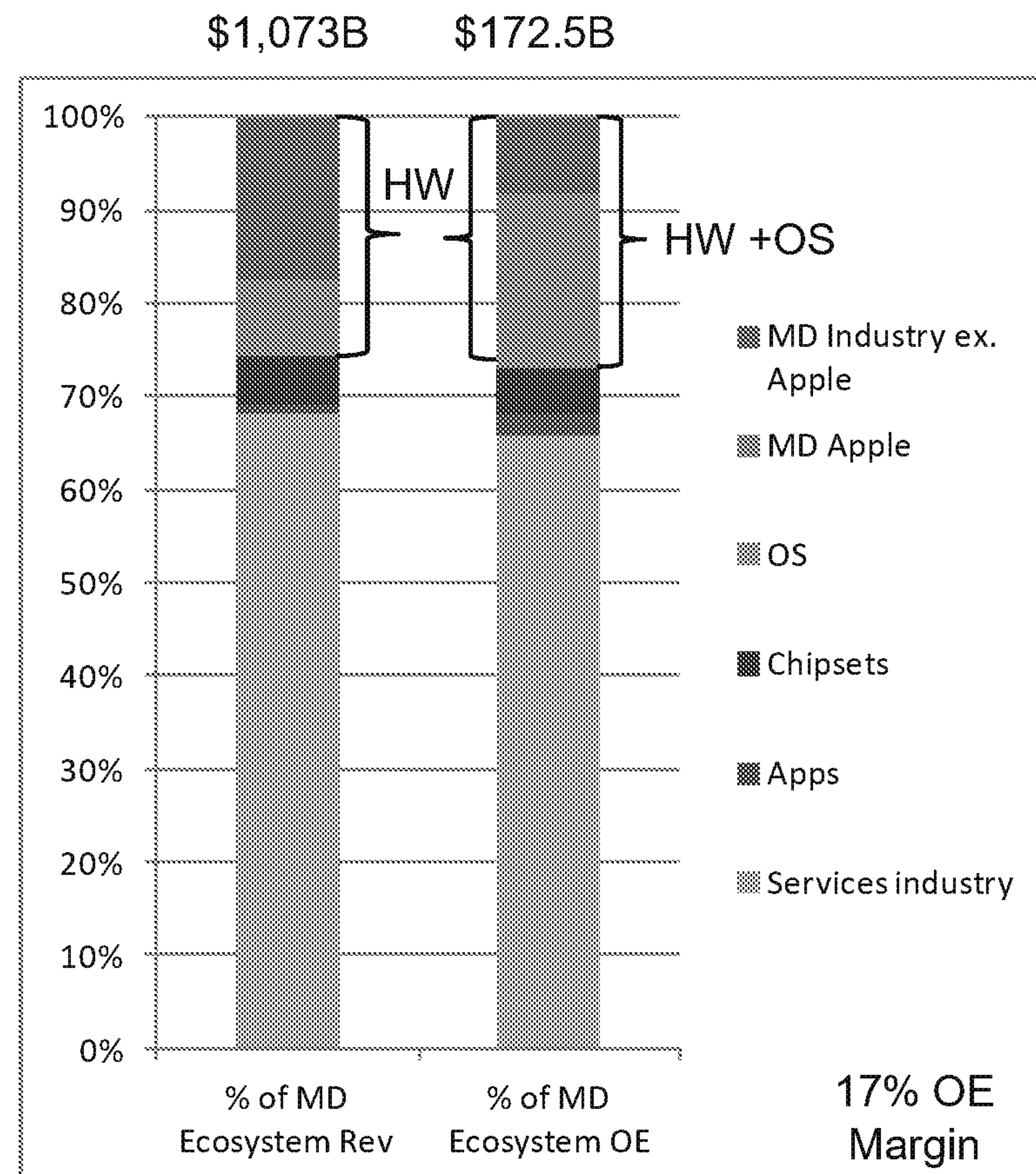
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Mobile Ecosystem has ~170 B Profits

PC Ecosystem Revenue and OE 2012



Mobile Ecosystem Revenue and OE 2012



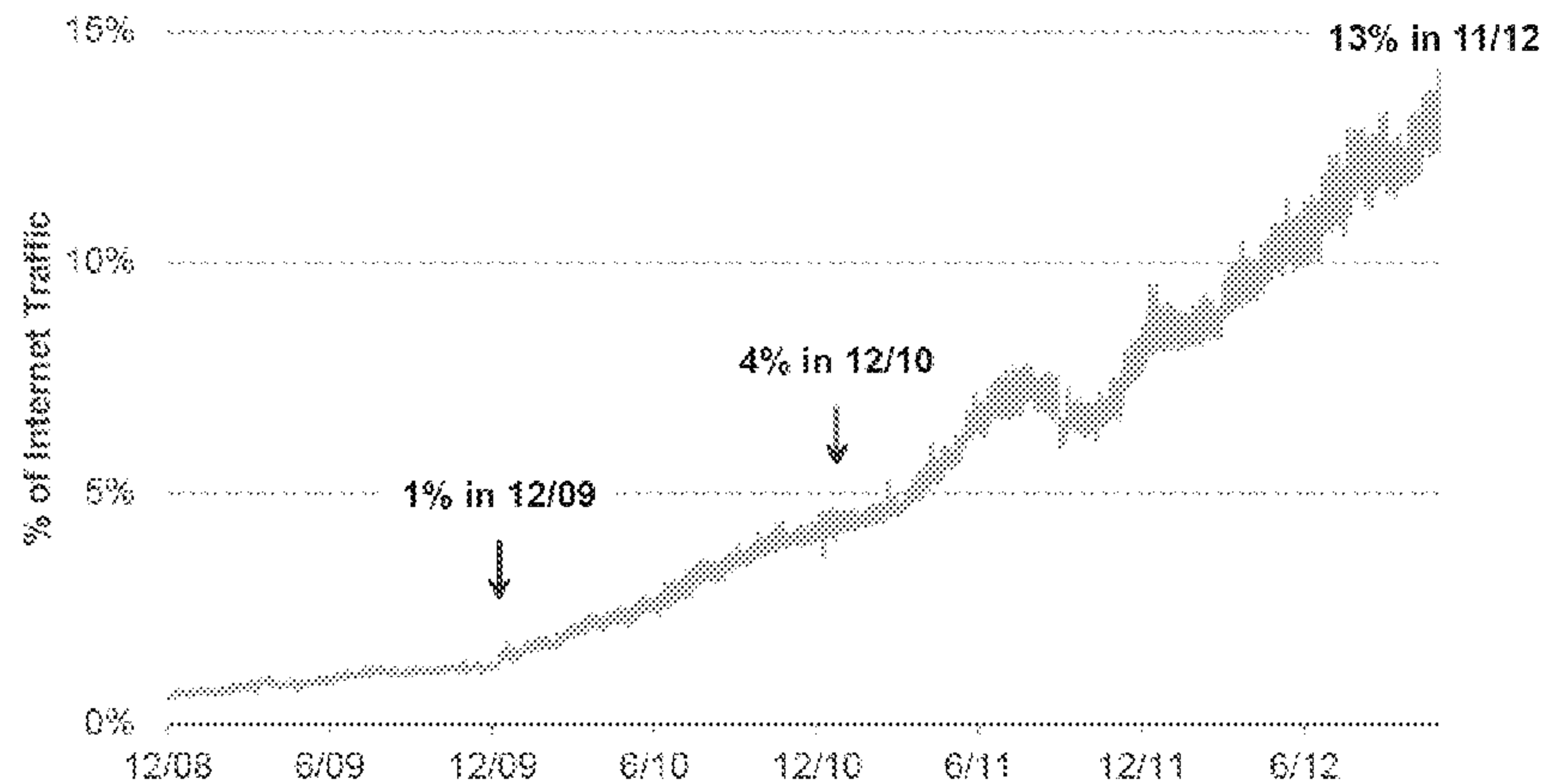
- Mobile devices over 2x ecosystem revenue vs. PC
- Mobile devices OE margins 70% higher than PC
- MD HW higher consolidation (95% owned by 2 players vs. 55% in PC)
- Semis take 20% of ecosystem profit in PC (Intel) vs. only 5% in Mobile Devices (All Semis)
- Mobile devices OS takes ~0% due to Android (free), Windows minimal volume, and iOS embedded in Apple HW

*PC ecosystem defined as PC hardware + Intel PC + Microsoft Windows + Apps/Ads + Service Provider

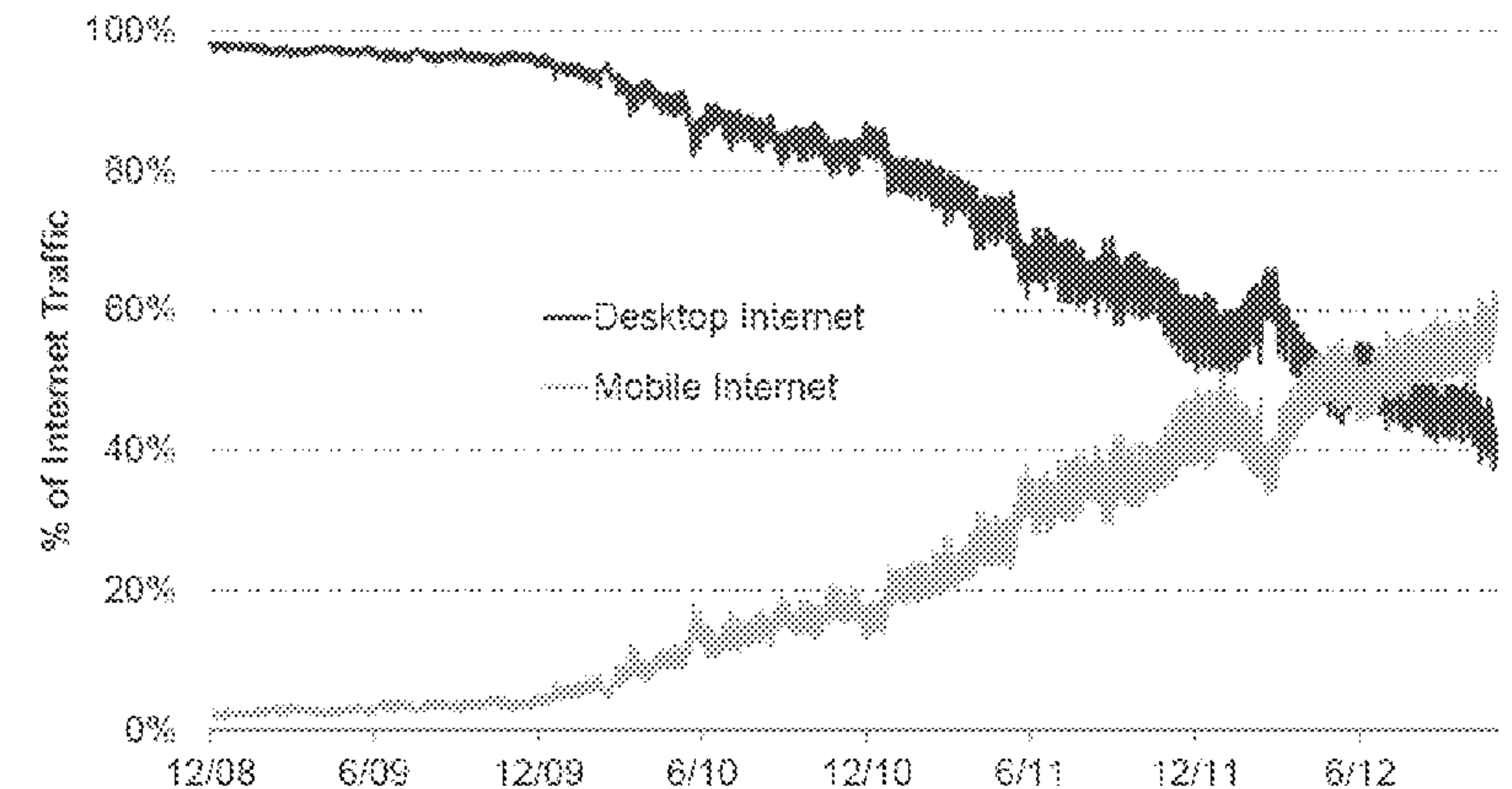
**MD ecosystem defined as MD hardware (all OEMs) + Chipset providers + Mobile OS + Apps/Ads + Service Provider

World is rapidly moving to mobile with ~15% internet traffic coming from mobile phones, even in emerging economies; Mobile monetization has followed the trend

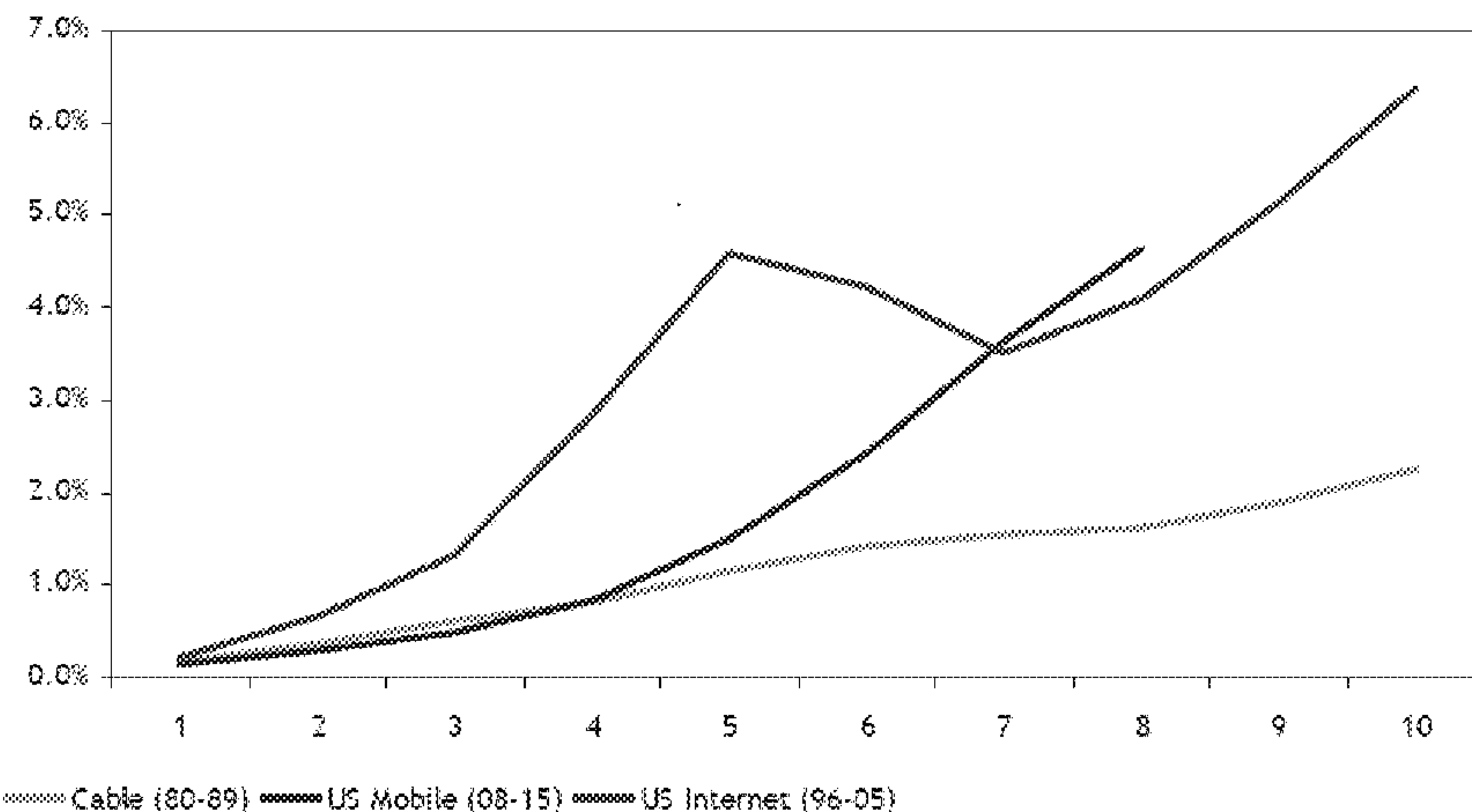
Global mobile traffic as a % of total internet traffic (2008-12)



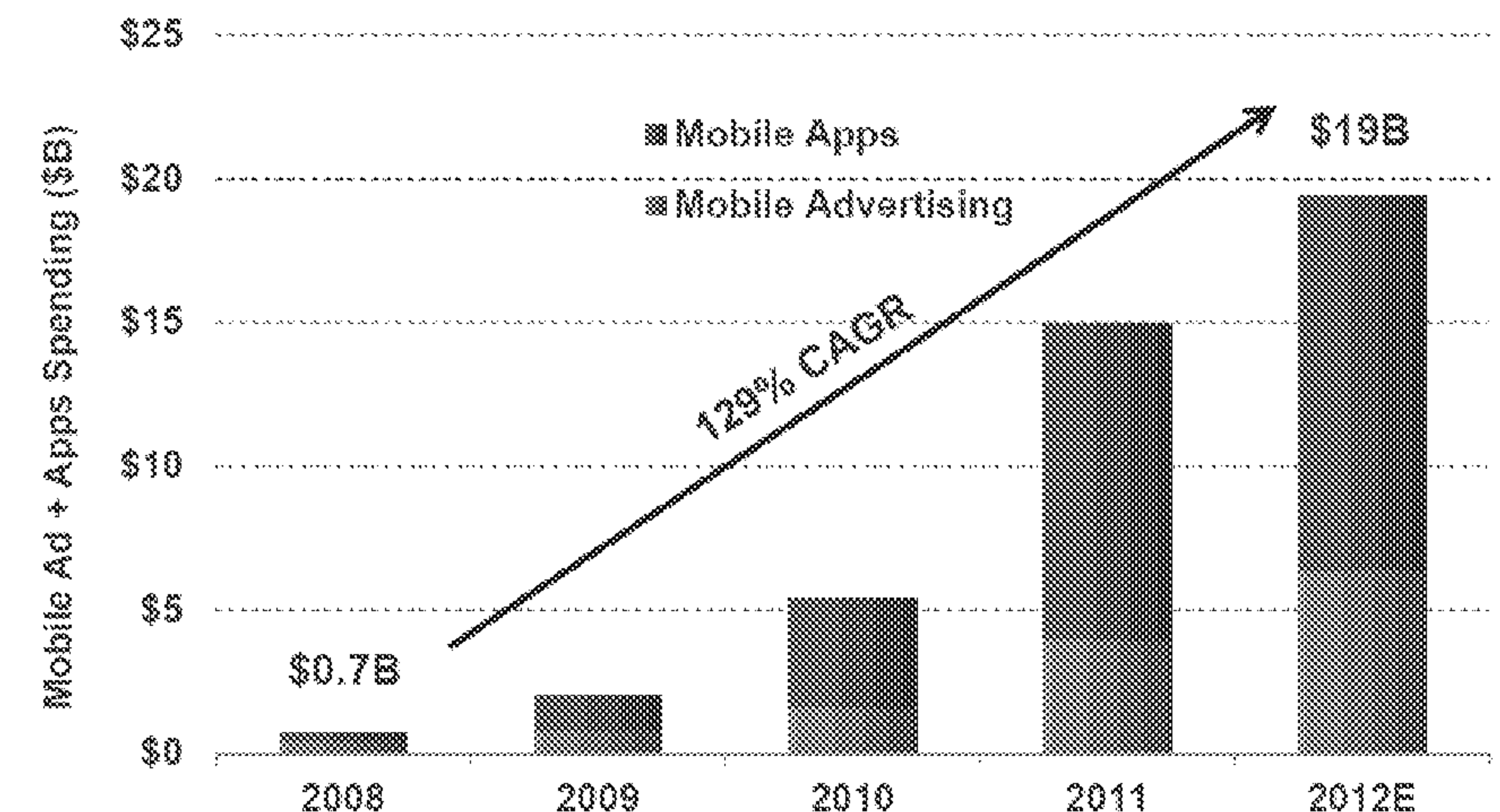
E.g. in India, Mobile Internet Traffic even surpassed Desktop Usage



Ad Dollar allocation in first 10 years from introduction (as a % of total ad spend in the US)



Global Mobile App and Advertising Revenue, 2008-12



Source: StatCounter Global Stats

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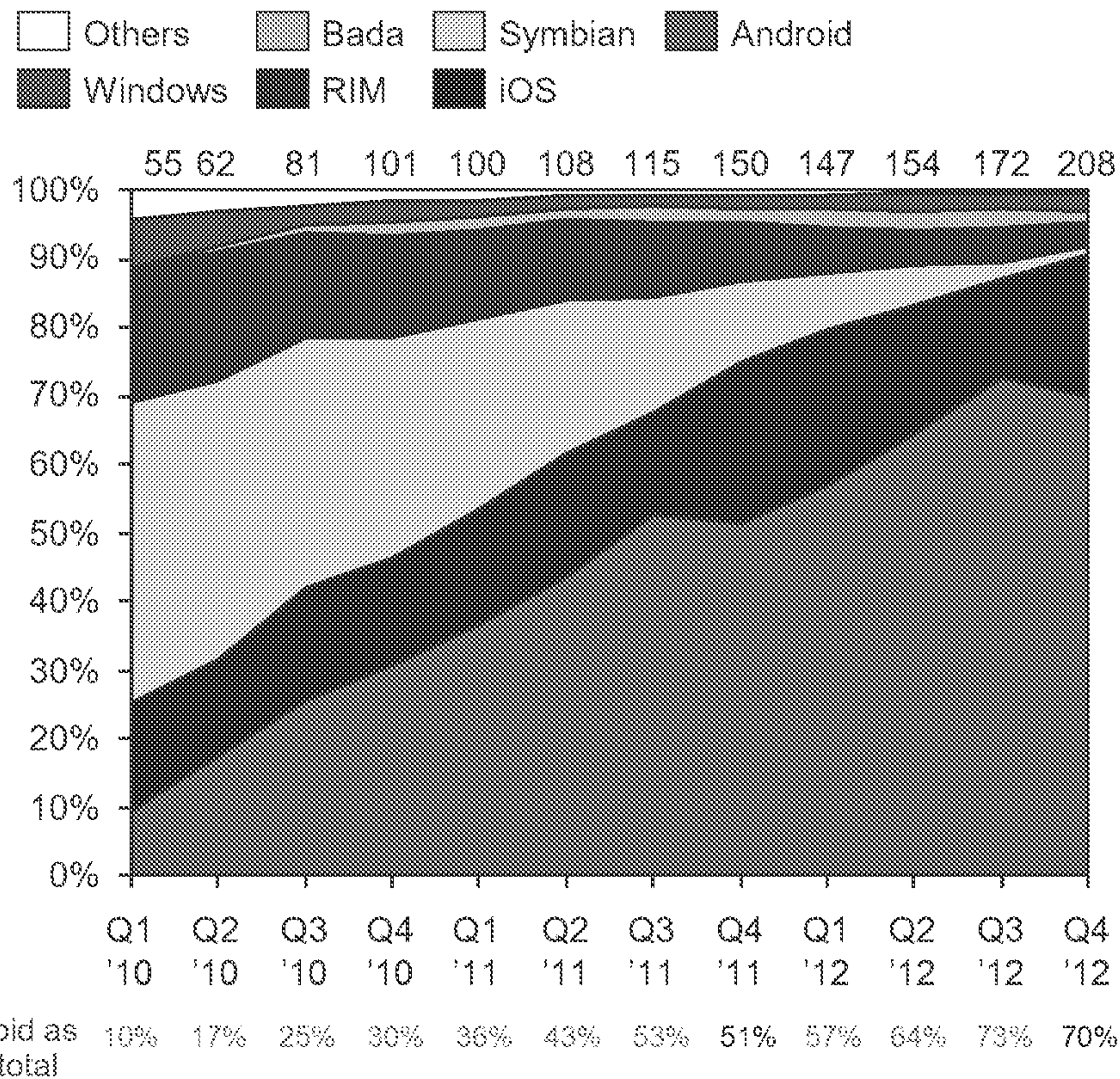
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Google has a strong position in mobile ecosystem through Android installed base, which has risen dramatically since 2009, reaching 70% of the SPs sold in 2012

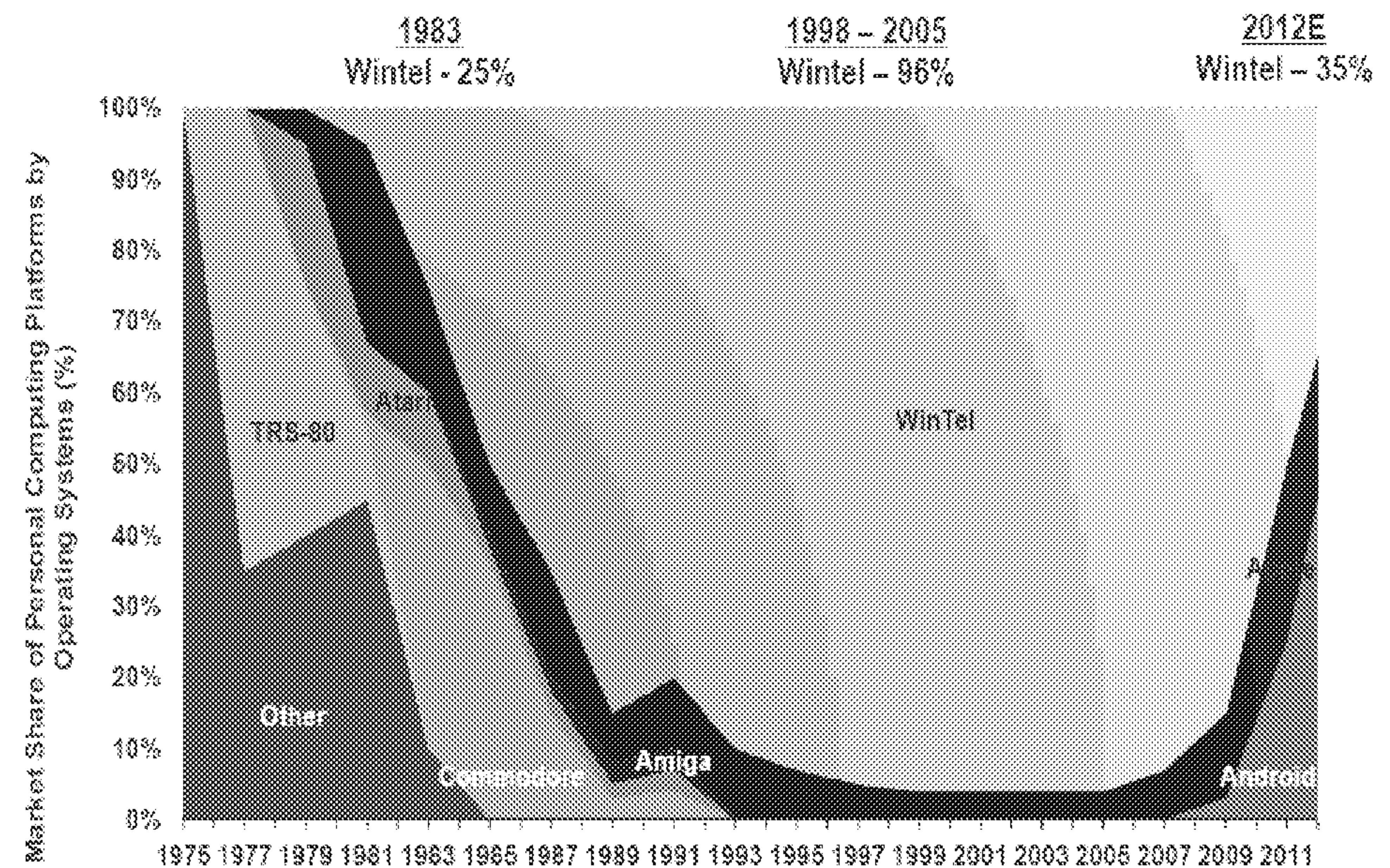
Android and iOS now have a combined share of 91% of the global SP volume, up from 25% in Q1'2010

Quarterly smartphone units by OS (M units)



Android now has a meaningful share even when seen from the broader computing platforms view

Global Market Share of Personal Computing Platforms by Operating System Shipments, 1975–2012 (% share)



Source: Gartner Mobile Phones by Region and Country, 4Q12; Samsung Press Release January 2013

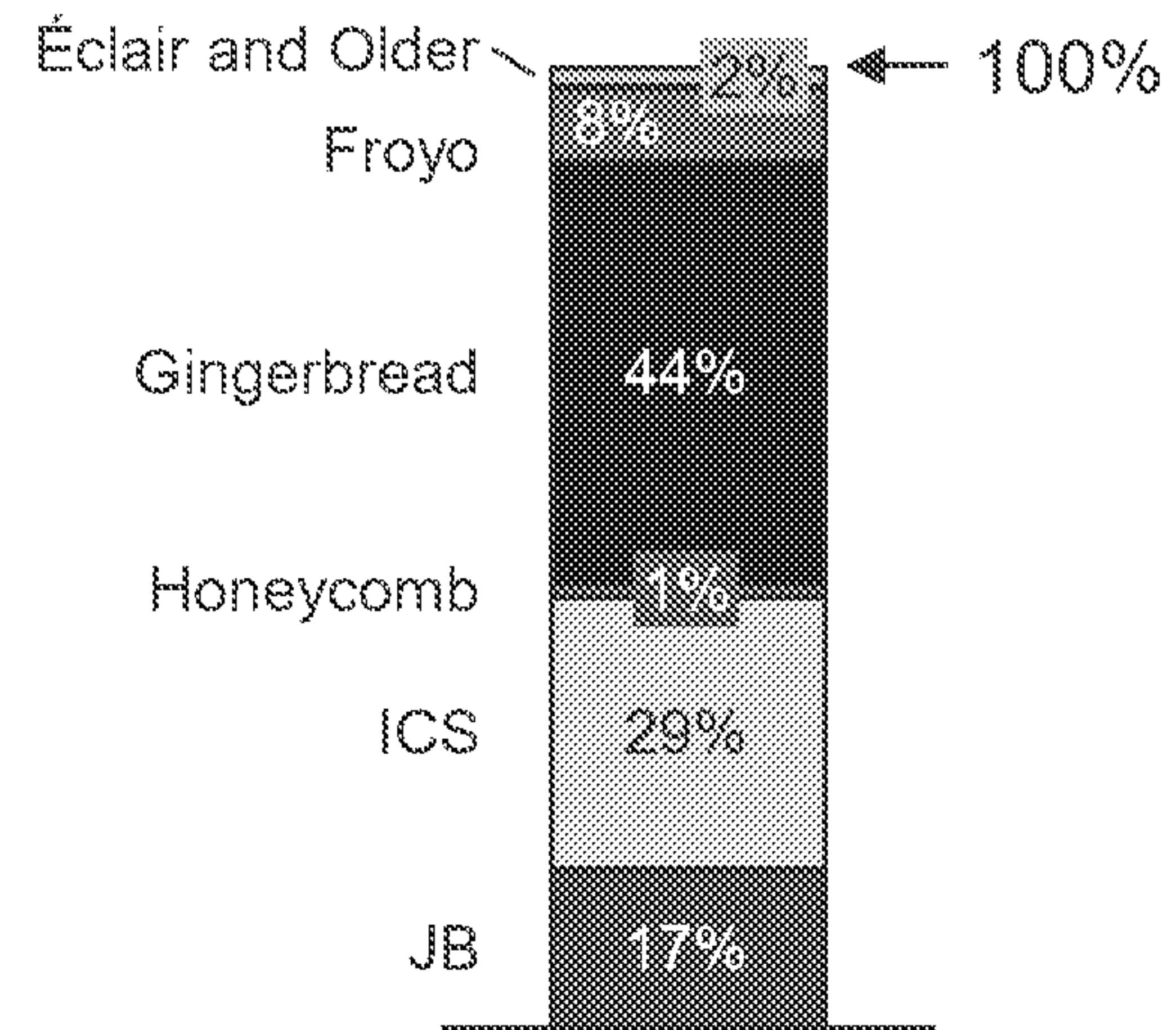
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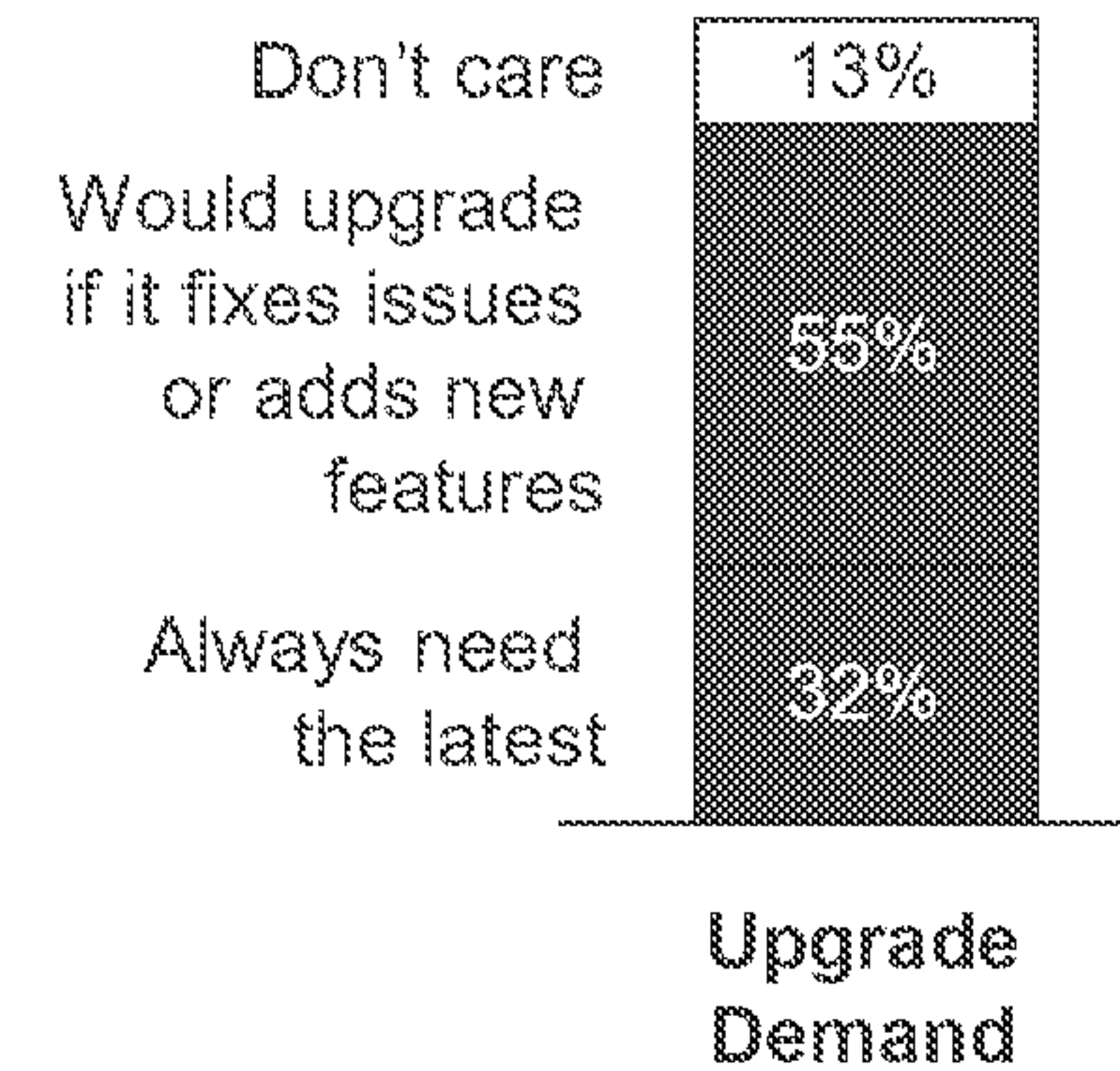
03/20/2013 Page 14
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However the Android ecosystem has not evolved the way Google may have wanted to -
 (1) Ecosystem is fragmented resulting in inconsistent user experience..

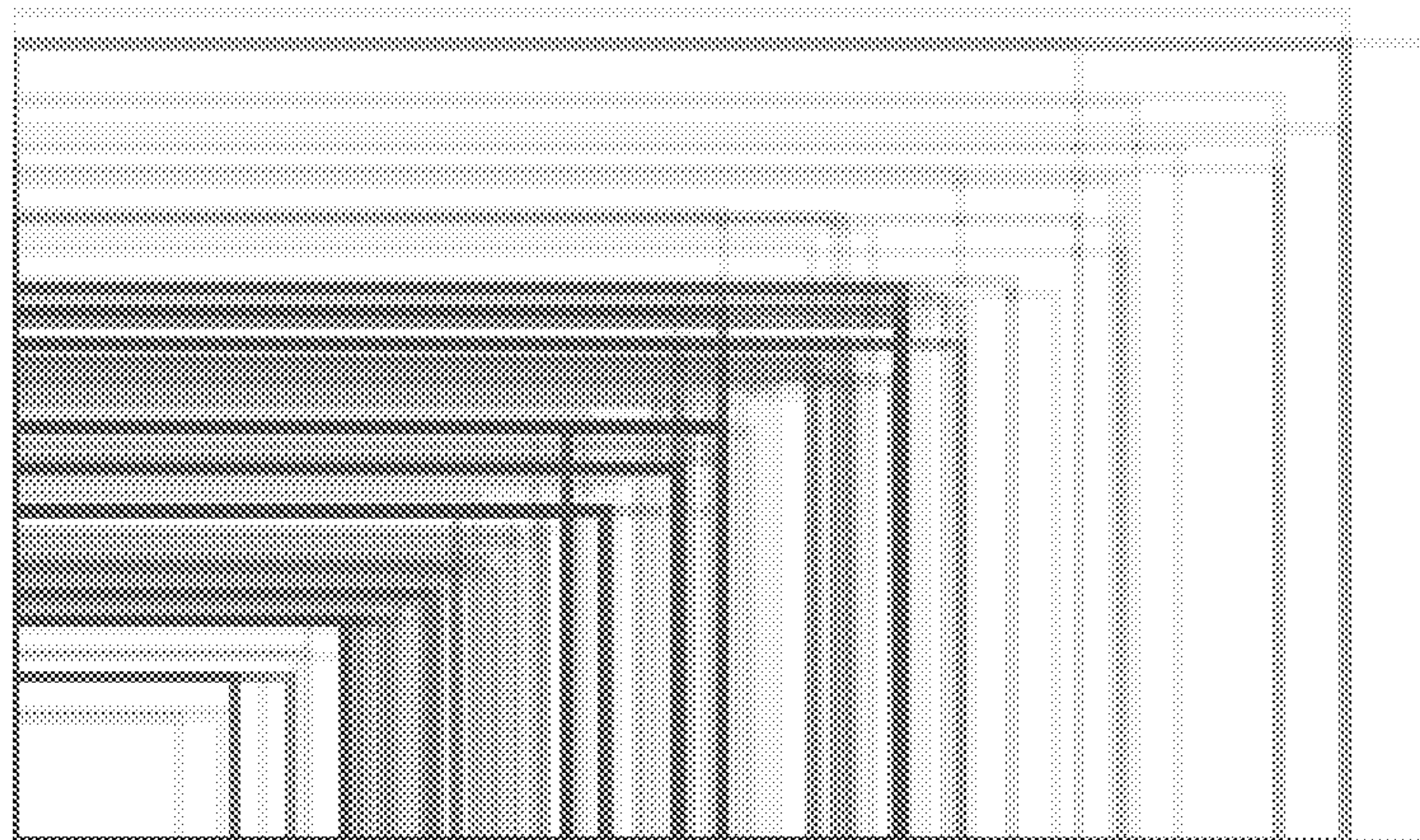
Installed base of Android by OS fragmented



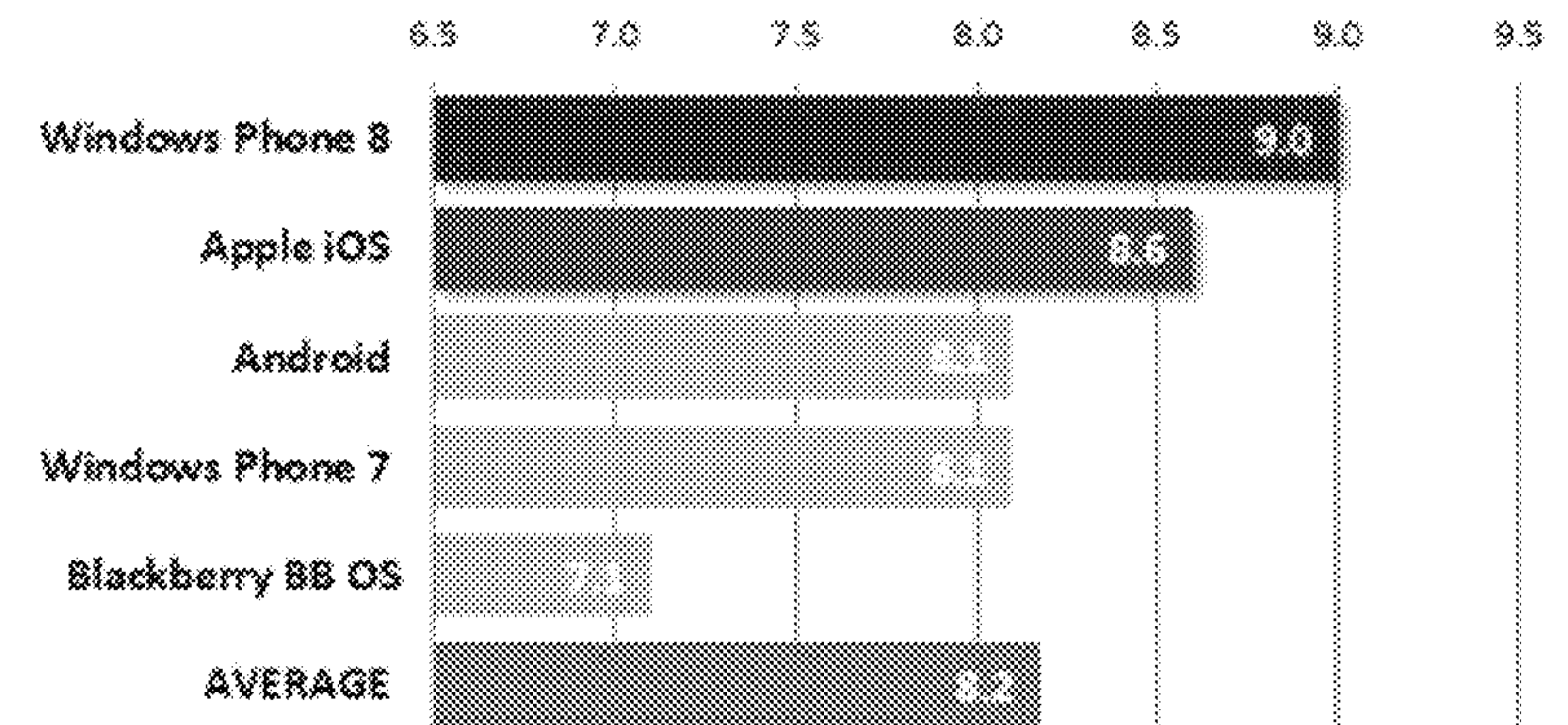
>85% consumers expect their devices to be maintained to latest OS, but fragmentation prevents upgrades



Myriad of different screen sizes of Android devices
 (Drawn to scale)



Consumer satisfaction in Android still lagging iOS



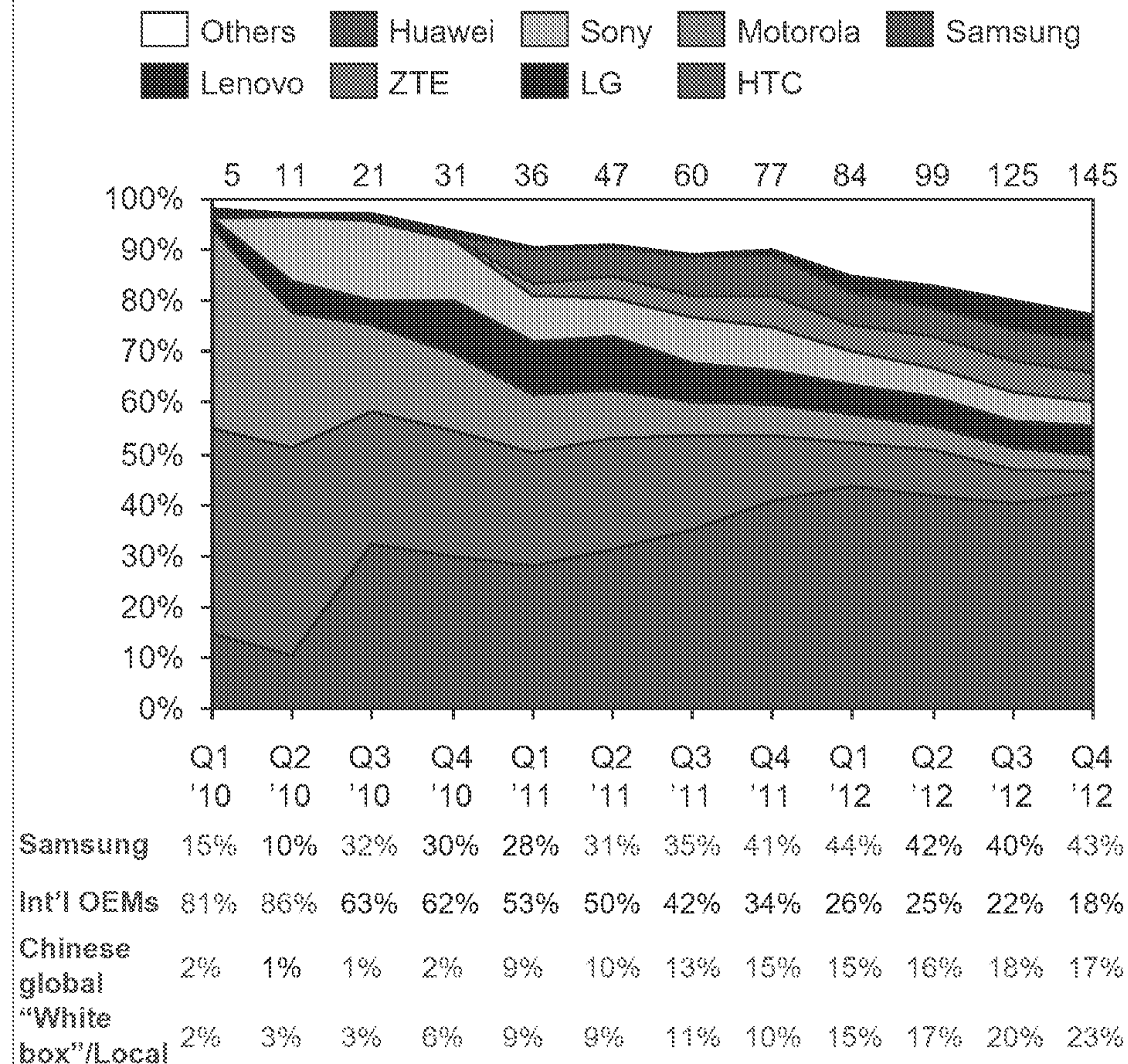
Source: Google, OpenSignal, Consumer Marketing Intelligence

..And (2) Android is now dominated by Samsung, and cost-leaders in China and India; China largest Android geo, but Google Mobile Services blocked

Android volume by OEM (m units):

Android ecosystem dominated by:

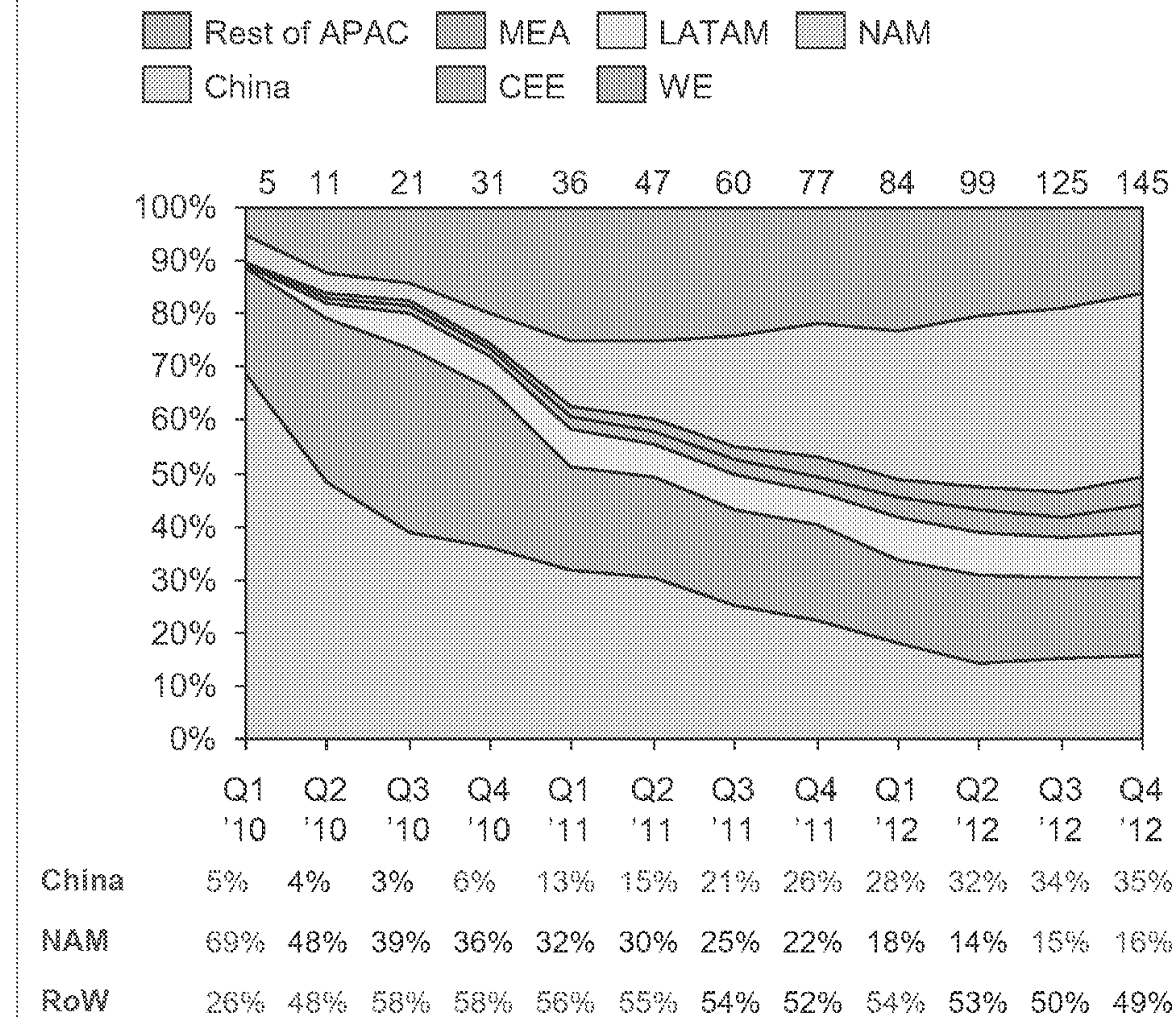
- An integrated scale player: Samsung (43% share)
- Cost-leaders: Chinese global OEMs – ZTE, Huawei, Lenovo – and “white box” / local OEMs in China, India and JP (40% share)



Android volume by Region (m units):

China now accounts for 35% of Android SP volume globally

- Volume and share growing rapidly driven by local OEMs
- Google Mobile Services blocked in China, hence Google Services only 65% of the global Android volume

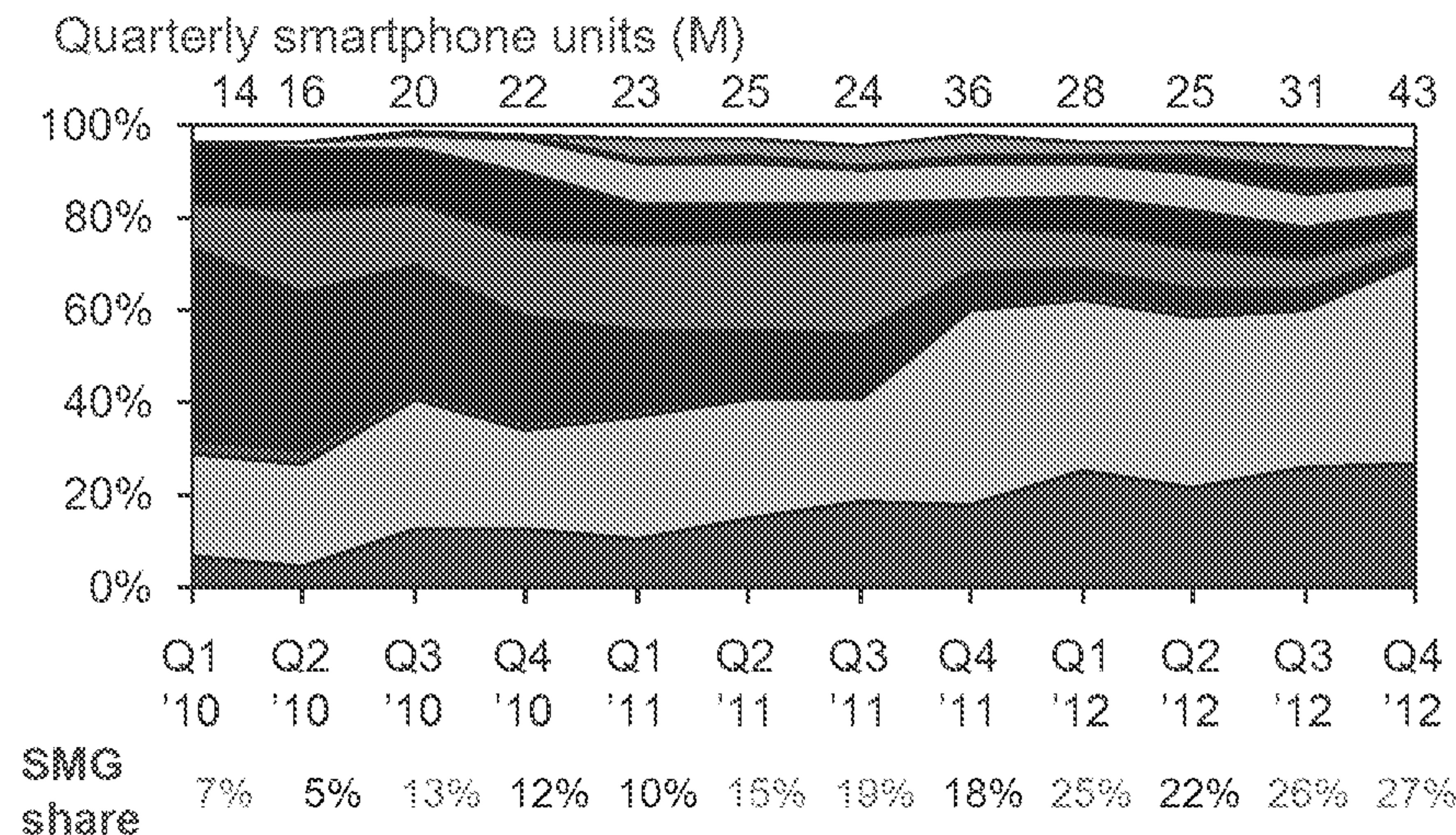


Samsung and Apple Are Winning

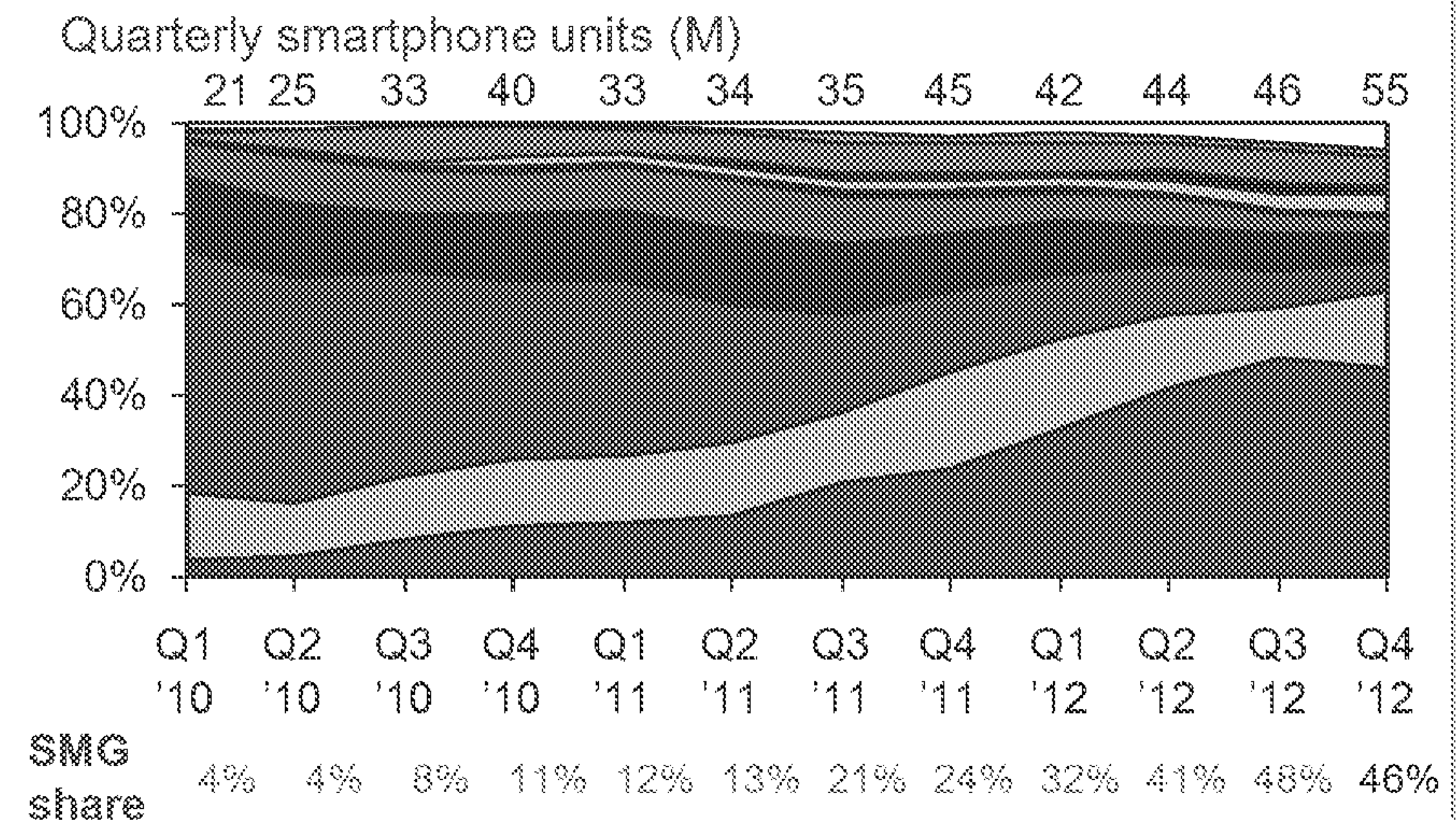
Samsung and Apple Experiencing Strong Growth across all Regions



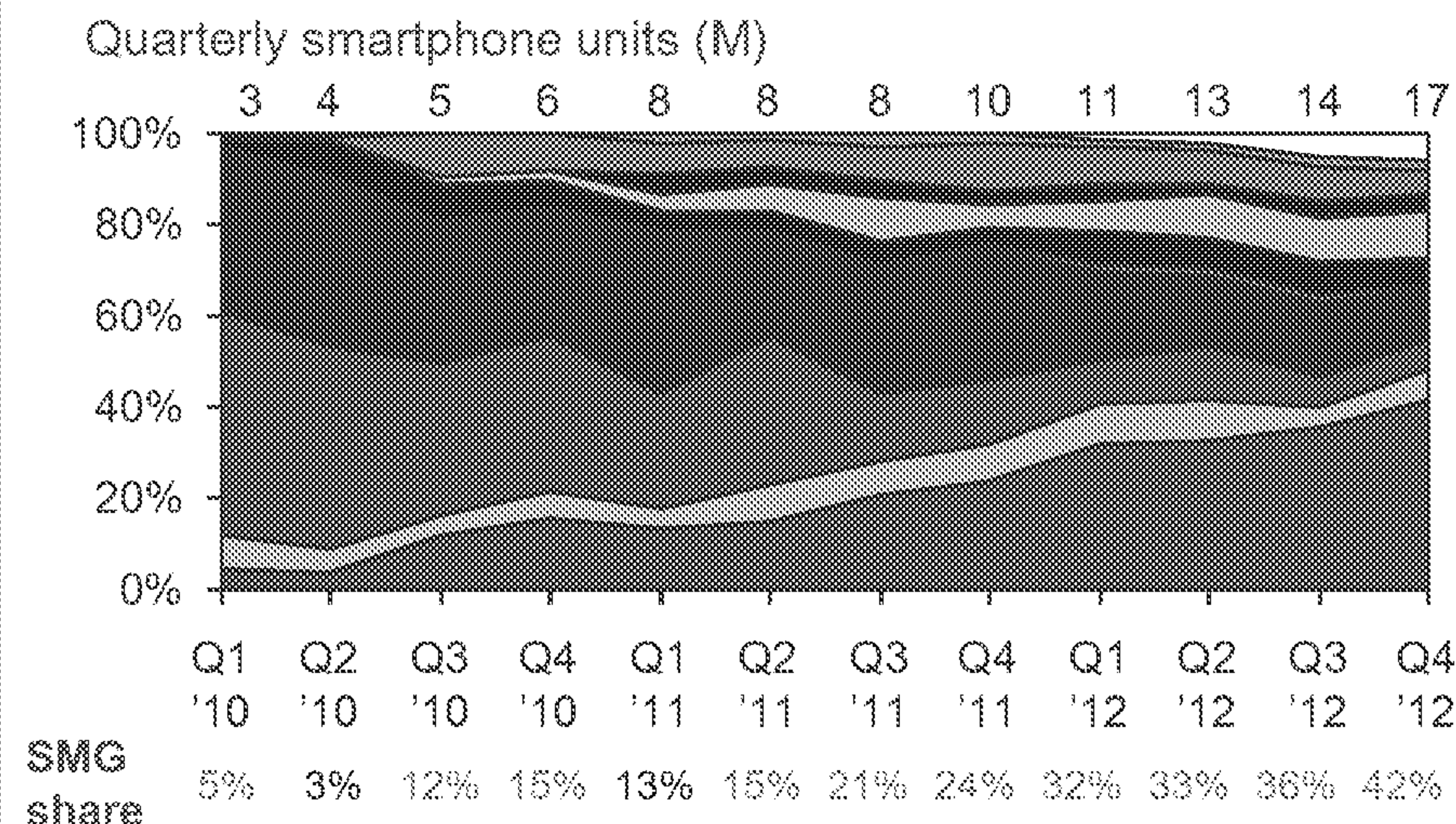
North America: Apple ahead, Samsung gaining



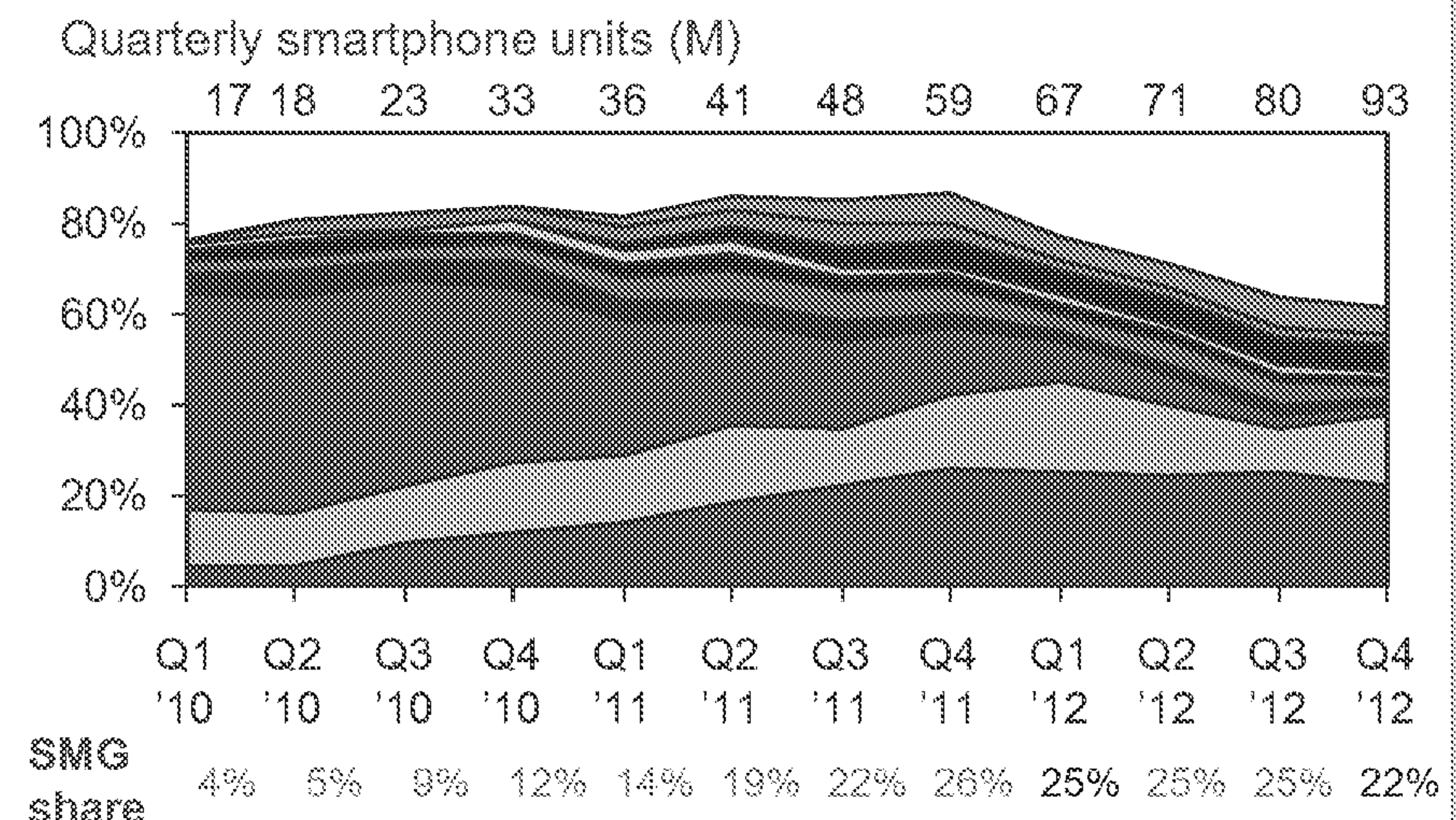
EMEA**: Samsung building share, Nokia diminishing



LATAM: Samsung gaining fast; Apple small and flat



APAC: Samsung, Apple, 'others' gaining share



** EMEA includes Western Europe + Central & Eastern Europe + Middle East and Africa regions

Source: Gartner Mobile Phones by Region and Country, 4Q12

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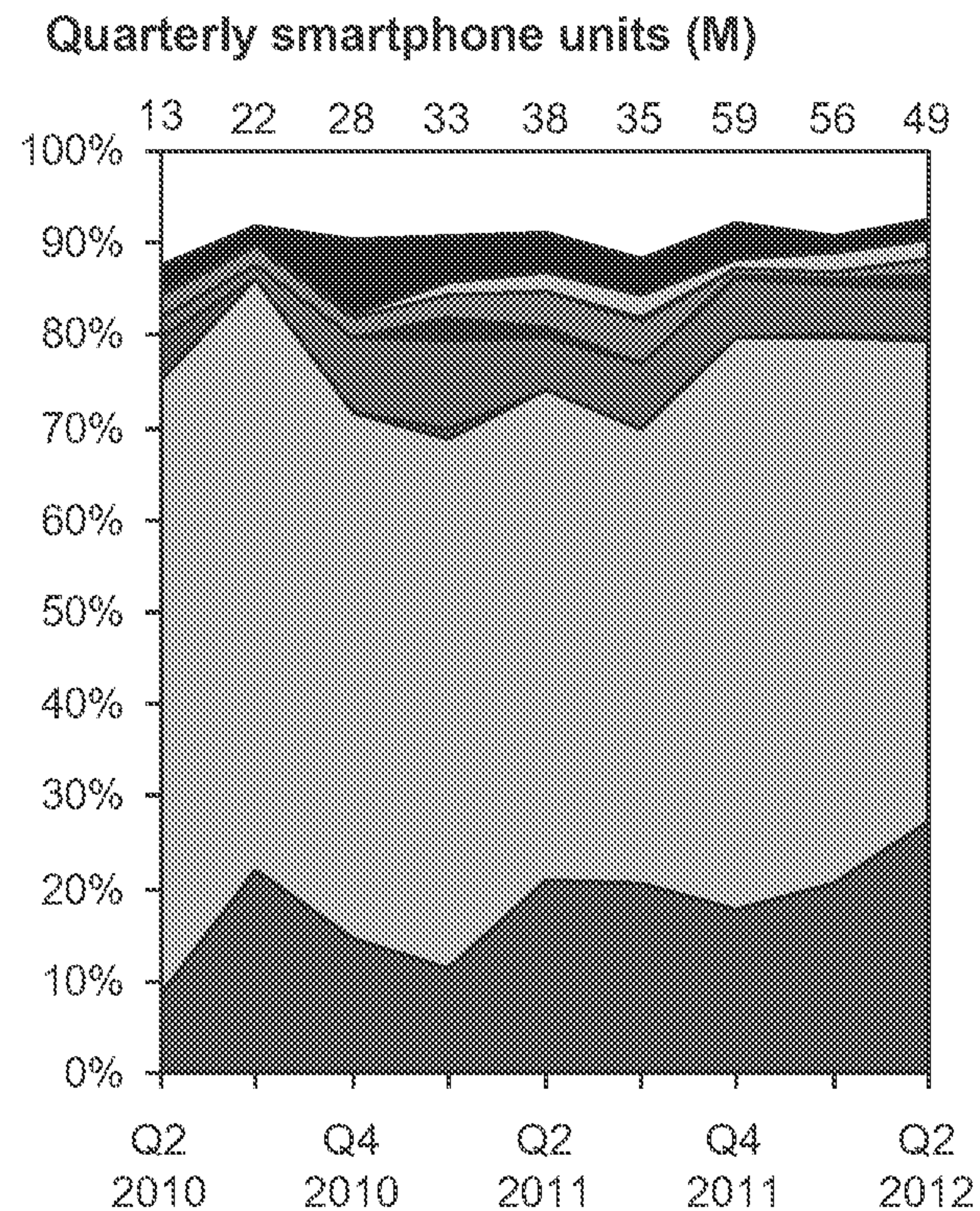
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Samsung has Gained share in all Price Segments; Apple Remains Strong in High-End with >50% Share

Others LG ZTE RIM Nokia Samsung
Motorola Huawei Sony HTC Apple

>\$400 ASP: Apple >50% this price segment

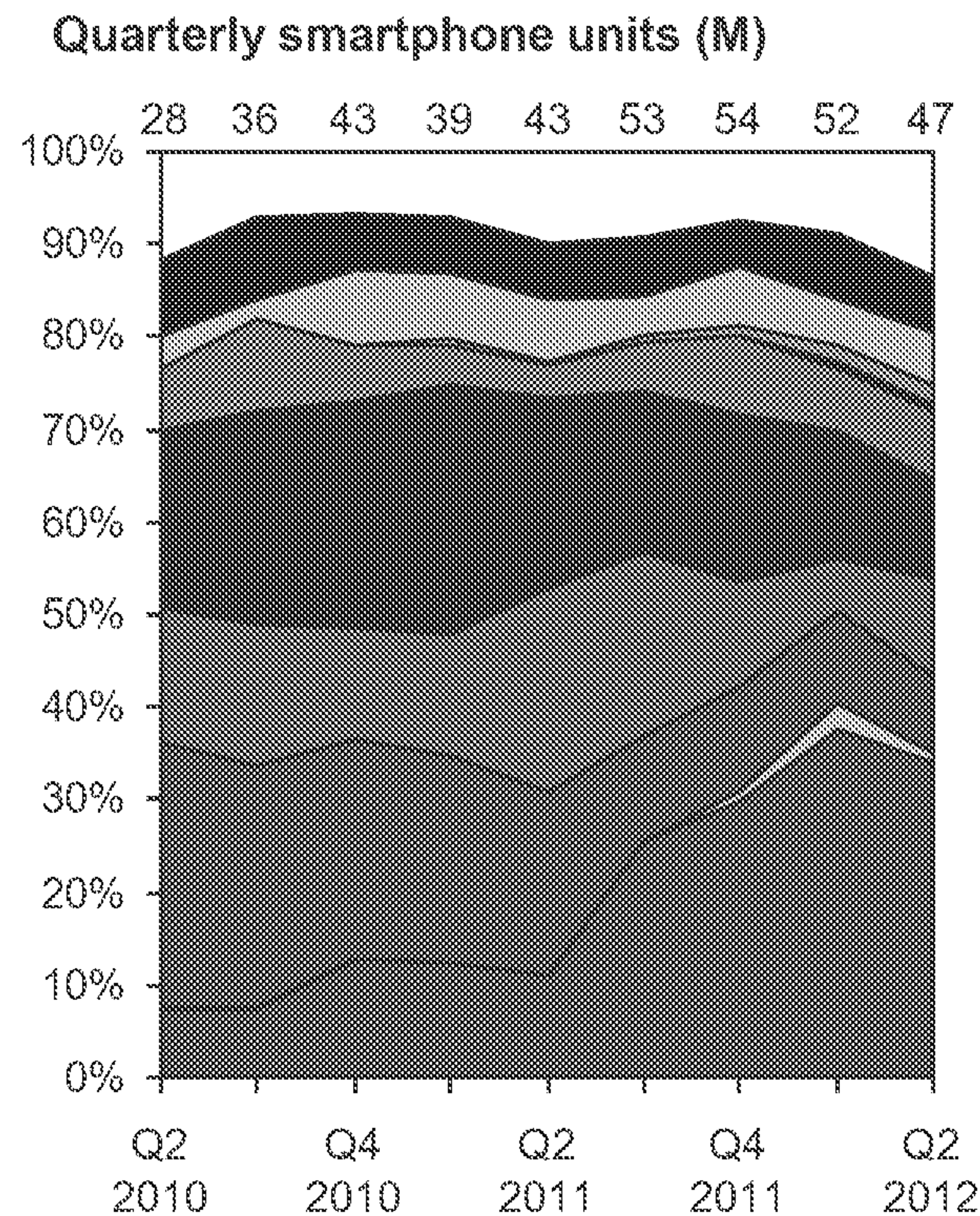


Q2 '12 Samsung share: 27%

Q2 '12 [REDACTED] share: [REDACTED]

Growth, Q2 '10 to Q2 '12: 286%

\$200-400 ASP: Samsung rapidly growing; Nokia, RIM declining

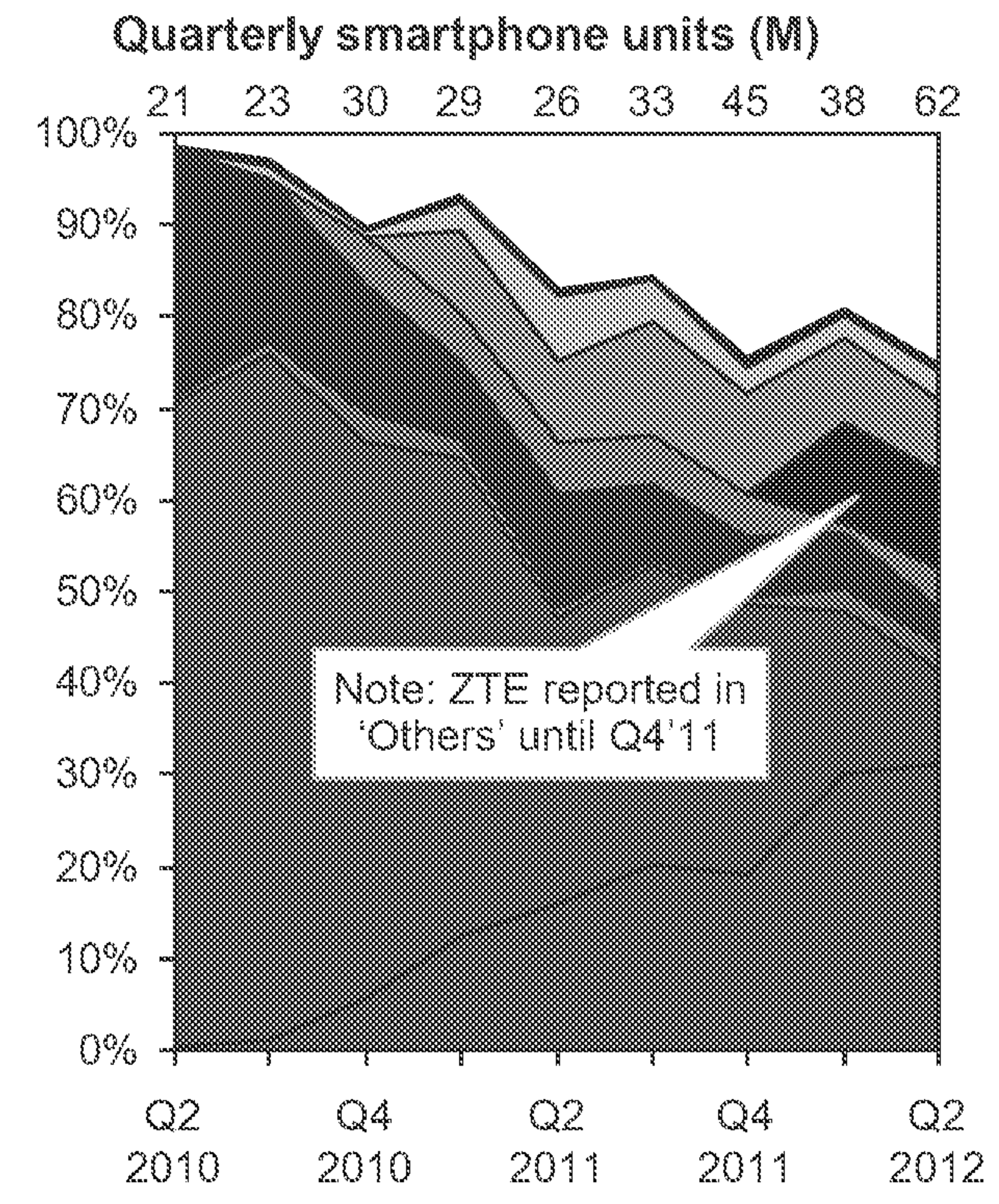


Q2 '12 Samsung share: 34%

Q2 '12 [REDACTED] share: [REDACTED]

Growth, Q2 '10 to Q2 '12: 67%

<\$200 ASP: Samsung, ZTE, and Huawei growing



Q2 '12 Samsung share: 31%

Q2 '12 [REDACTED] share: [REDACTED]

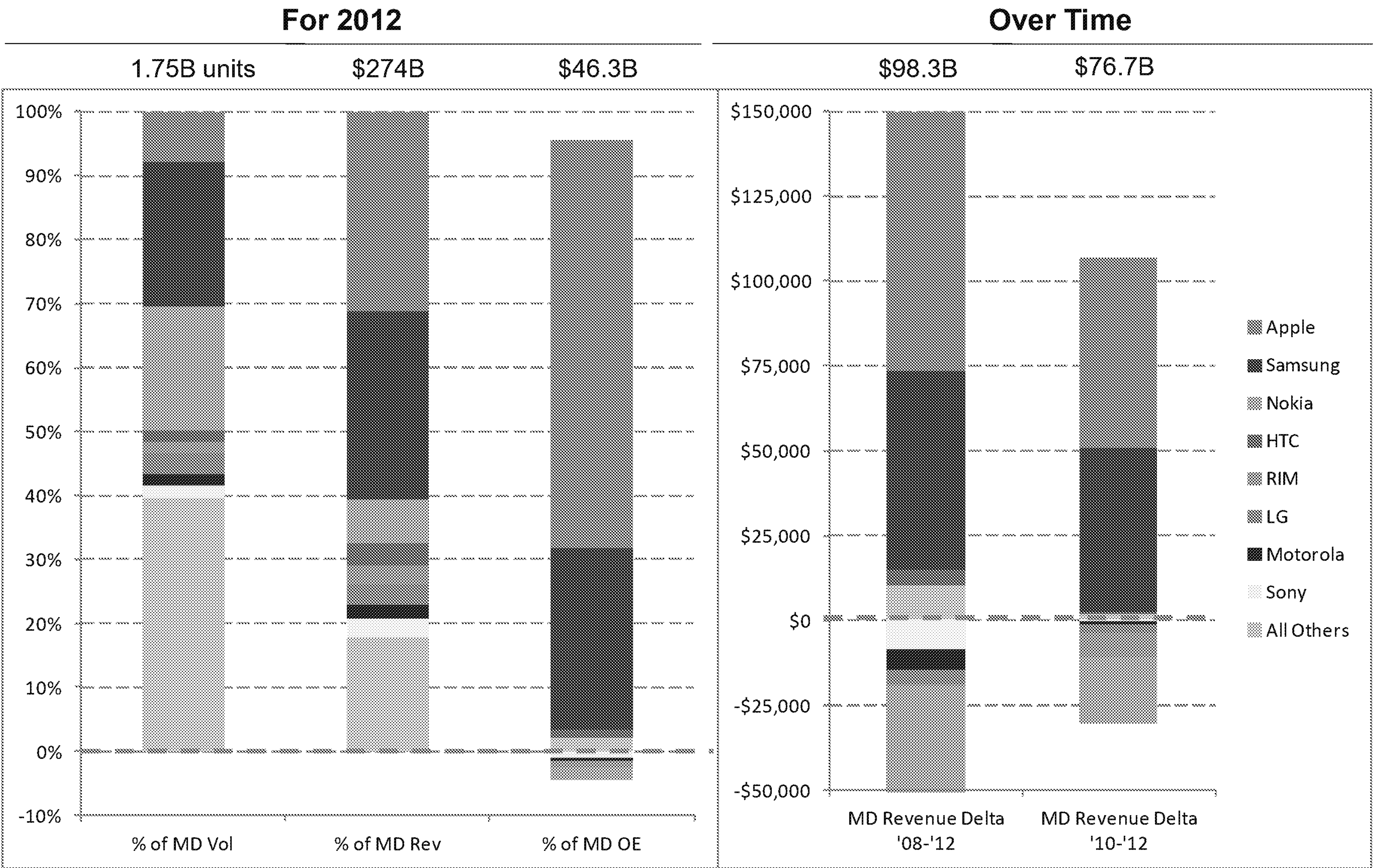
Growth, Q2 '10 to Q2 '12: 190%

Source: Strategy Team estimates, based on Canalys and company data

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Apple and Samsung Capture ~100% of Mobile Devices Profits; “All Others” Have 40% of Handset Volume, 18% of Revenue and Zero to Negative Profit



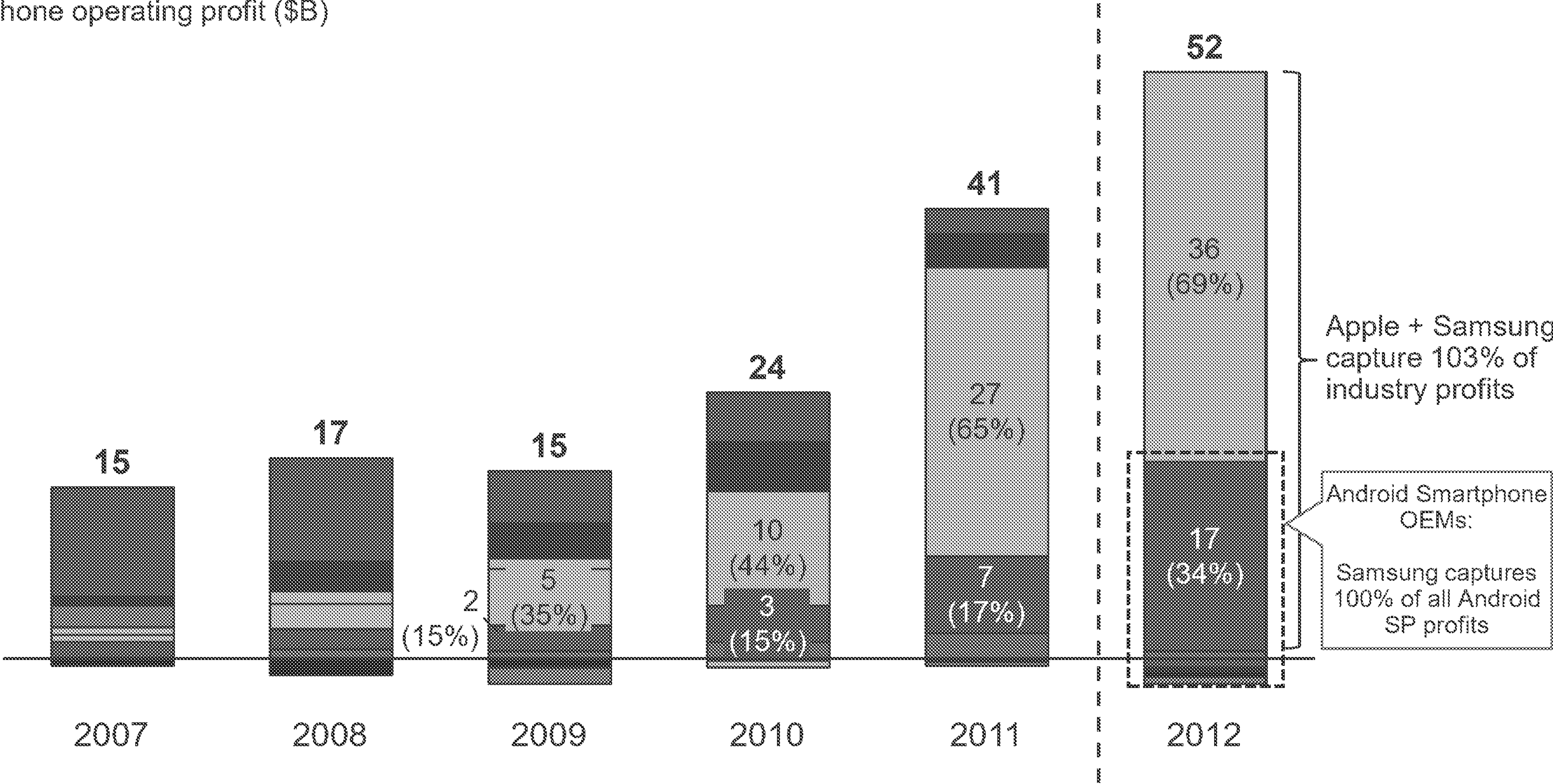
In 2012, Apple drove 8% of MD units, 31% of MD revenue, but earned 70% of MD industry OE

Samsung captures 100% of all Android Smartphone profits

Apple and Samsung together comprised 103% of smartphone operating profits in 2012

- Nokia
- Motorola
- LG
- Samsung
- RIM
- Sony
- Apple
- HTC

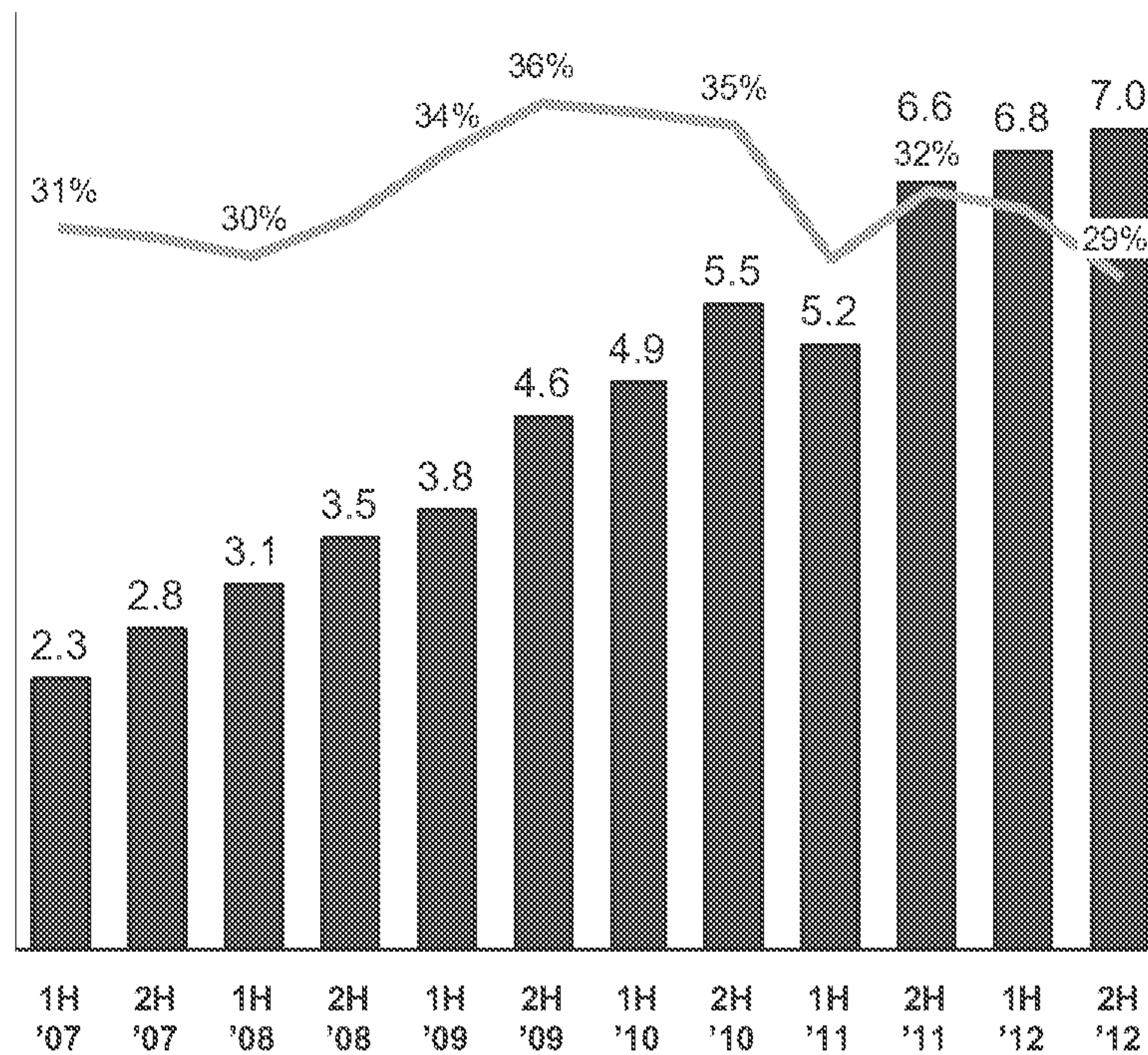
Smartphone operating profit (\$B)



Samsung has overtaken Google in operating profits; currently earns more from Android phones than Google's entire operations

Google Operating Earnings and Margin (2007-12)

USD billion, %



Samsung Mobile Devices Operating Earnings and Margin (2007-12)

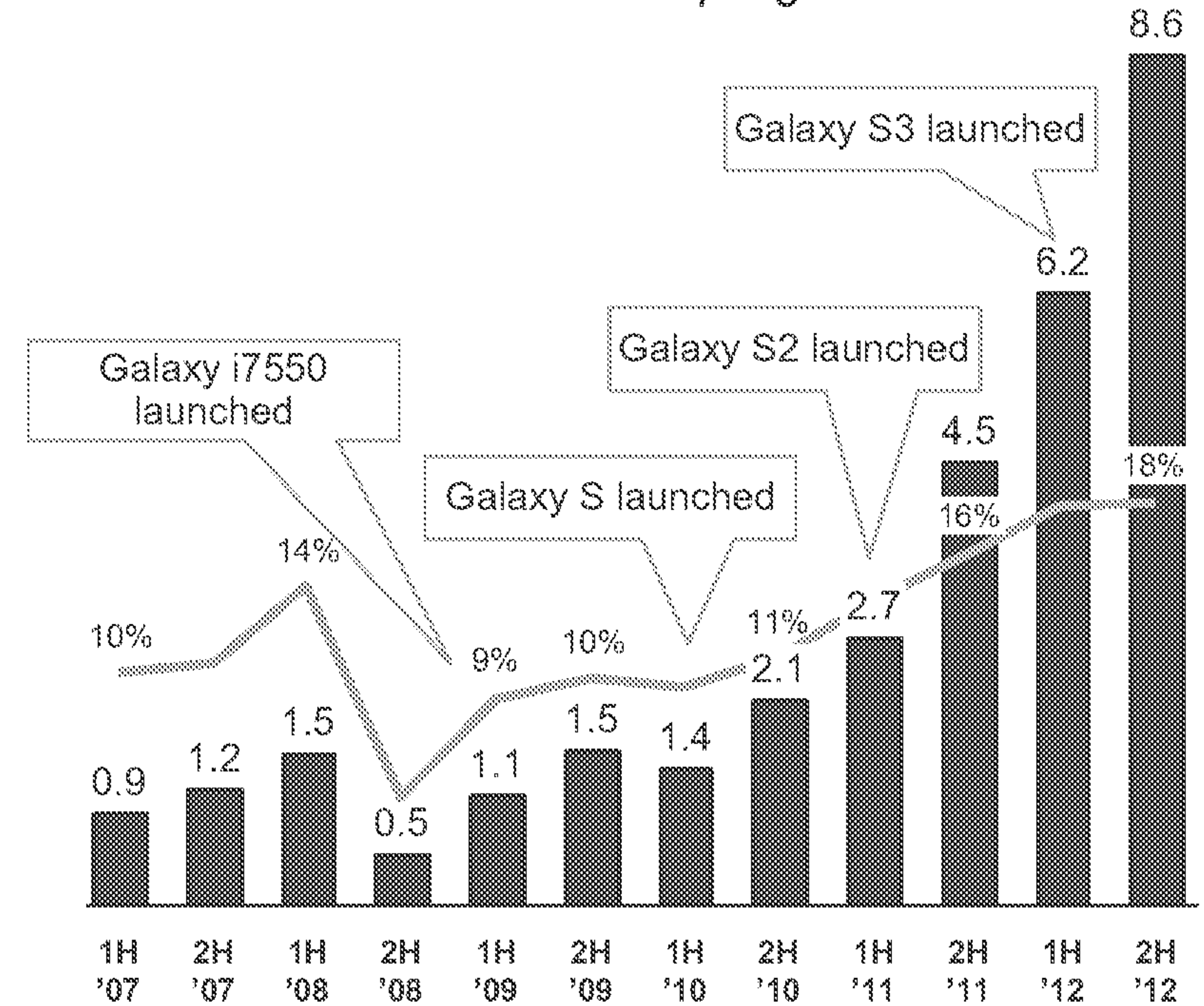
USD billion, %

Samsung Mobile OE
as a % of Samsung's
total OE

45% 24% 17% 30% 44% 52% 56% 55%

Op Margin Op Income

Since adopting Android



Source: Google Annual reports, MMI Strategy OEM Financials updated March '13; Samsung company financials

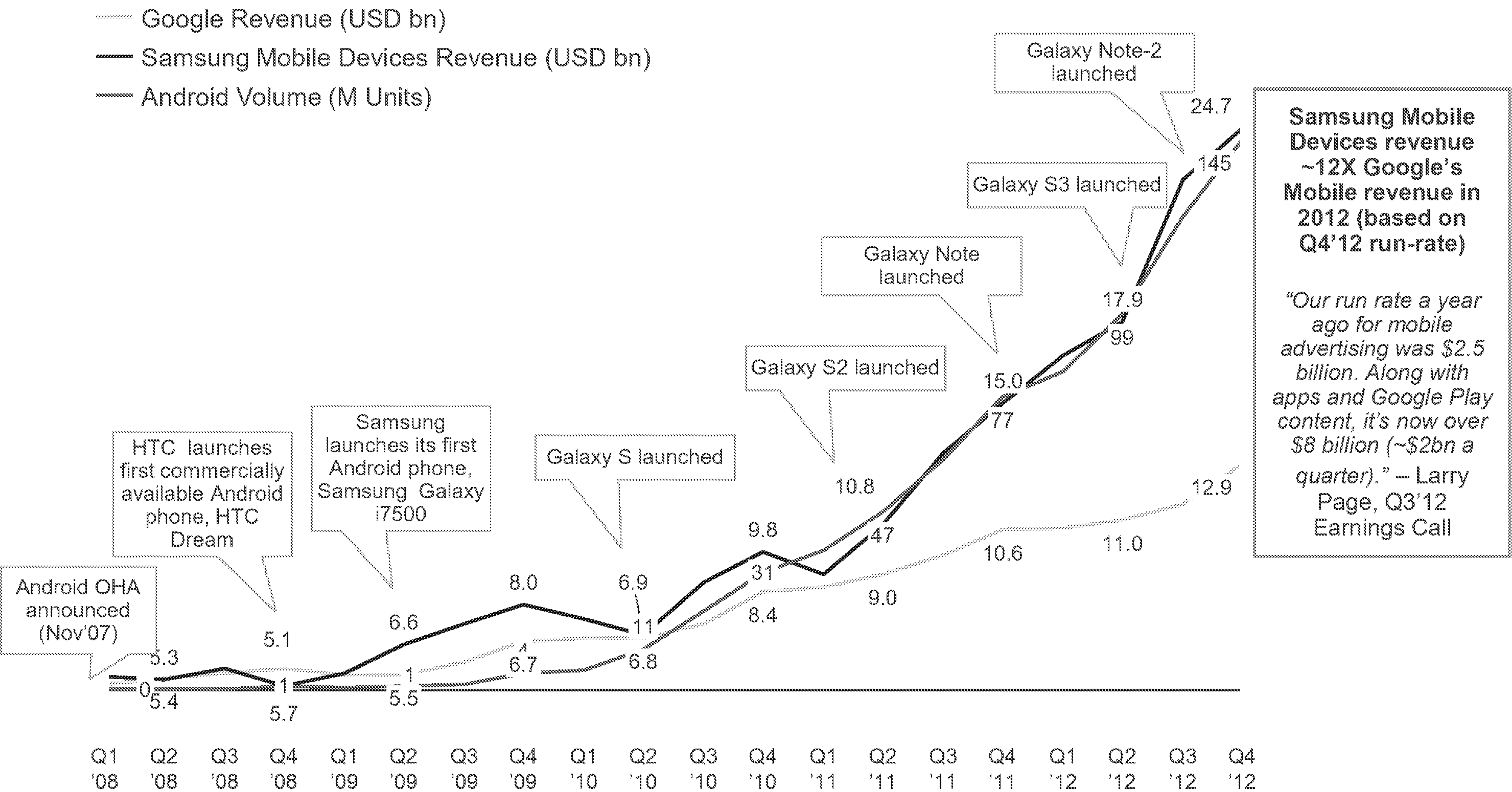
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Samsung Mobile Devices revenue has tracked growth in Android shipments



Source: Google Annual reports; Strategy OEM Financials updated March '13; Gartner Mobile Phones by Region and Country, 4Q12

Samsung is competing directly with Google, positioning itself to control more consumer touch points and to enhance control over the home-screen

Marketing and branding	<ul style="list-style-type: none">In the Samsung GS4 launch, Google or Android not mentioned even onceGS3 and GS4 marketing collateral make no mention of Google or Android																																				
Products	<ul style="list-style-type: none">Samsung benefited from early access to Android OS code through Nexus programs to buoy flagship Galaxy devices<ul style="list-style-type: none">Samsung S 24M lifetime volume vs Nexus S 0.6MSamsung SII 40M lifetime volume vs Galaxy Nexus 0.4M																																				
Mobile Services	<ul style="list-style-type: none">Nearly all core GMS applications have been replaced or re-named with Samsung apps, built on top of Android's open APIs, or through strong partnerships with Google competitors:<table><tr><th>Services</th><th>Google</th><th>Samsung</th></tr><tr><td>UI</td><td>Stock</td><td>TouchWiz</td></tr><tr><td>Predictive typing</td><td>In-built</td><td>Partnership with Swiftkey</td></tr><tr><td>Voice assistance</td><td>Google Now</td><td>S Voice / Drive</td></tr><tr><td>Communication</td><td>Google Talk, Messenger</td><td>ChatOn</td></tr><tr><td>Video Calling</td><td>Google Hangout</td><td>Video Call (upto 3 people)</td></tr><tr><td>Translator</td><td>Google Translate</td><td>S Translator</td></tr><tr><td>Cloud</td><td>Google Drive</td><td>Partnership with Dropbox</td></tr><tr><td>Music / Games / Digital Content</td><td>Play Store</td><td>Samsung Hub</td></tr><tr><td>Smart TV platform</td><td>Google TV</td><td>HomeSync</td></tr><tr><td>Commerce</td><td>Wallet</td><td>Samsung Wallet</td></tr><tr><td>NFC</td><td>Wallet</td><td>S Beam</td></tr></table>	Services	Google	Samsung	UI	Stock	TouchWiz	Predictive typing	In-built	Partnership with Swiftkey	Voice assistance	Google Now	S Voice / Drive	Communication	Google Talk, Messenger	ChatOn	Video Calling	Google Hangout	Video Call (upto 3 people)	Translator	Google Translate	S Translator	Cloud	Google Drive	Partnership with Dropbox	Music / Games / Digital Content	Play Store	Samsung Hub	Smart TV platform	Google TV	HomeSync	Commerce	Wallet	Samsung Wallet	NFC	Wallet	S Beam
Services	Google	Samsung																																			
UI	Stock	TouchWiz																																			
Predictive typing	In-built	Partnership with Swiftkey																																			
Voice assistance	Google Now	S Voice / Drive																																			
Communication	Google Talk, Messenger	ChatOn																																			
Video Calling	Google Hangout	Video Call (upto 3 people)																																			
Translator	Google Translate	S Translator																																			
Cloud	Google Drive	Partnership with Dropbox																																			
Music / Games / Digital Content	Play Store	Samsung Hub																																			
Smart TV platform	Google TV	HomeSync																																			
Commerce	Wallet	Samsung Wallet																																			
NFC	Wallet	S Beam																																			
OS	<ul style="list-style-type: none">Expected to launch Tizen, OS for high end smartphones in 2H'13Tizen built by co-opting the key elements and technical underpinnings of Android																																				
Talent	<ul style="list-style-type: none">Significant expansion of Silicon Valley presence with planned growth to 3 campuses and several thousand employees by 2020																																				

Samsung also controls many components, Apple controls many points for user experience vs. Motorola and other Android OEMs who are fast integrators

Vendor Control & Integration of HW and SW

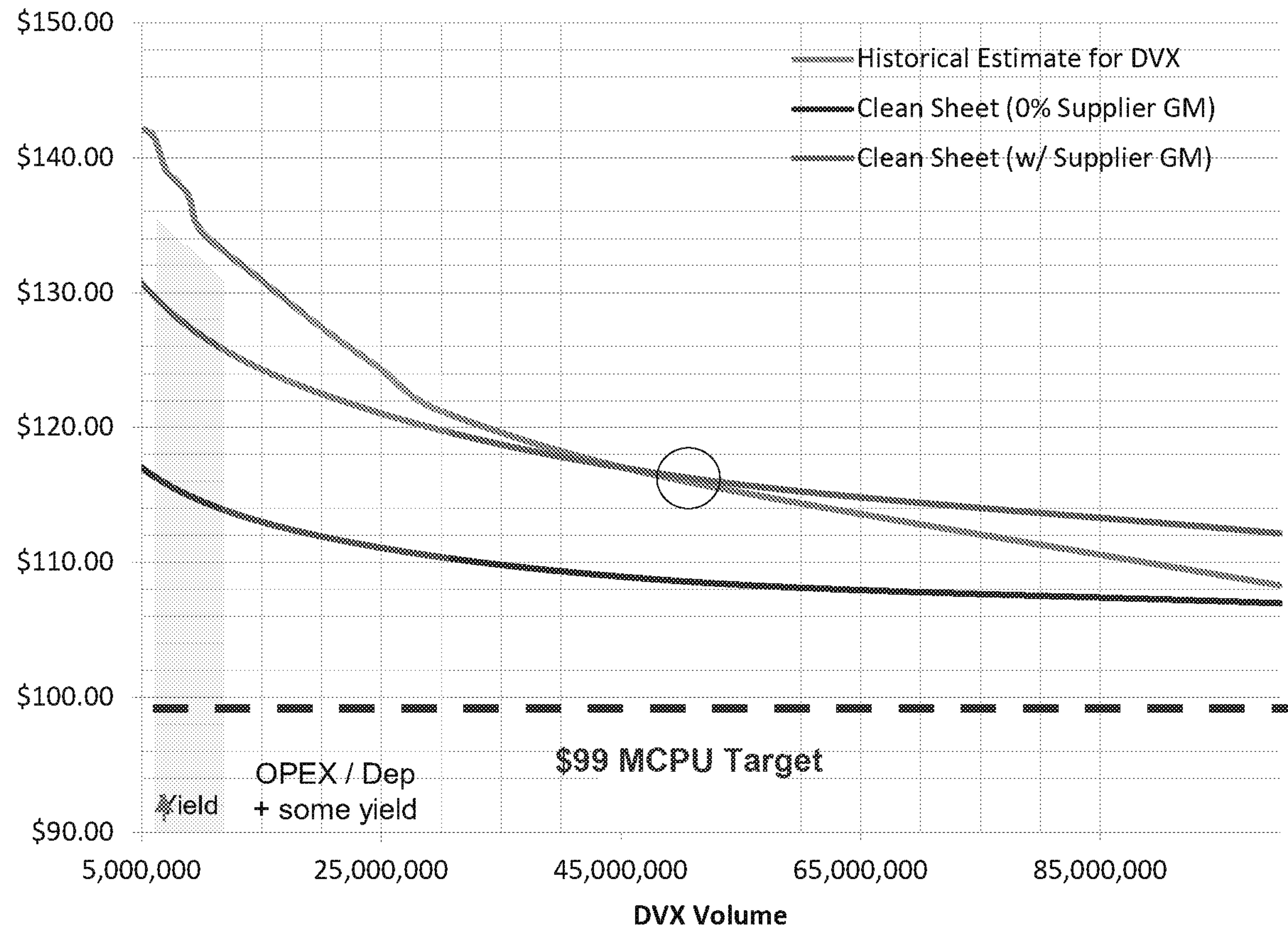
Area	Element	Samsung		Apple
Hardware Design or Supply Control	Display	In-house		Co-developed new tech with Sharp
	Imager	In-house	Some in-house (array)	In-house chip. Custom system
	AP	Some in-house (Exynos)		In-house (PA Semi acq.)
	GPU			In-house design likely coming
	RAM	In-house		In-house controller (Anobit acq.)
	Storage	In-house		
	Battery	In-house		Some in-house. May buy IPS
	Sensors	Likely customized DSP	Some in-house (sensor hub)	In-house biometric (Authentec acq.)
	Baseband	Some in-house		
HW-SW Integration	OS to AP & Components	Low	Low	High
	Apps to HW, SW (APIs)	Low	Low	High
	UI Rendering Control	Low	Low	High
	AP to Baseband	High	High	High
Software Key Native Apps	UI	Touch-Wiz		iOS UI
	OS	Tizen 2013		iOS
	Intelligent Assistance	S Voice / S Voice Drive		Siri
	Media	Samsung Hub		iTunes, iBooks, Newsstand
	Imaging	Camera (many features)		
	Internet & Maps			Safari, iOS Maps
	Commerce	S Wallet		Passbook
	Communication	ChatON		FaceTime
Services	Other	S Health	SmartActions	Mail, Reminders, 30 others
	Intelligent Assistance	S Voice / S Voice Drive		Siri
	Media (Music, Video, Print)	Samsung Hub		iTunes, iBooks, Newsstand
	Apps & Games Store	Samsung Apps		App Store
	Search			(Siri as front end)
	Maps & Navigation			iOS Maps
	Social			Game Center, Find my Friends
	Communication	ChatON		iCloud E-Mail, iMessage, FaceTime
	Storage			iCloud

- Samsung and Apple develop key HW and SW in-house. Tizen will improve Samsung's HW/SW control
- controls very little HW or SW. It is limited to being a component integrator

Samsung's Scale and Component Ownership can Allow it to Undercut our Price

Scale should enable [REDACTED] to reduce DVX MCU from \$143 to \$116 at 50M Units

Estimated DVX MCU Relative to Volume



SAMSUNG ADVATNAGE

- 1 Zero margin on internal components results in Samsung's savings of \$1.85 at 80M Units

Cost reduction	50M Units
Memory	\$1.01
Imager	\$0.69
Battery	\$0.15

- 2 Lower royalty to Qualcomm may result in savings of \$2.20 to \$2.85 for Samsung

Samsung can use high end profits to aggressively subsidize low end sales

Samsung estimated unit and gross margin forecast

Global	Vol (M)	Rev (M)	2014			
			ASP	GM%*	GM\$ (M)*	GM\$/unit*
Premium (US\$300+)	99.8	51,689	518	34%	17,701	177
High (US\$191-299)	103.9	27,041	260	28%	7,474	72
Mid (US\$100-190)	86.5	12,043	139	15%	1,752	20
Entry (US\$36-99)	70.9	6,469	91	8%	527	7
Total	361	102,006	283	26.9%	27,454	76



Samsung potential response

Global	Vol (M)	Rev (M)	2014			
			ASP	GM%*	GM\$ (M)*	GM\$/unit*
Premium (US\$300+)	99.8	51,689	518	34%	17,701	177
High (US\$191-299)	103.9	27,041	260	28%	7,474	72
Mid (US\$100-190)	86.5	10,207	118	0%	0	0
Entry (US\$36-99)	70.9	5,956	84	0%	0	0
Total	361	94,893	263	26.5%	25,175	70

Samsung's Immediate reaction

- Samsung can easily match competitor prices based on high tier profits
 - Blended GM% drops from 26.9% to 24.9%
 - Resulting in total 2.0% GM% decline
 - Samsung still has enough GM\$ from smartphones in higher tiers to compensate, even subsidize lower price devices

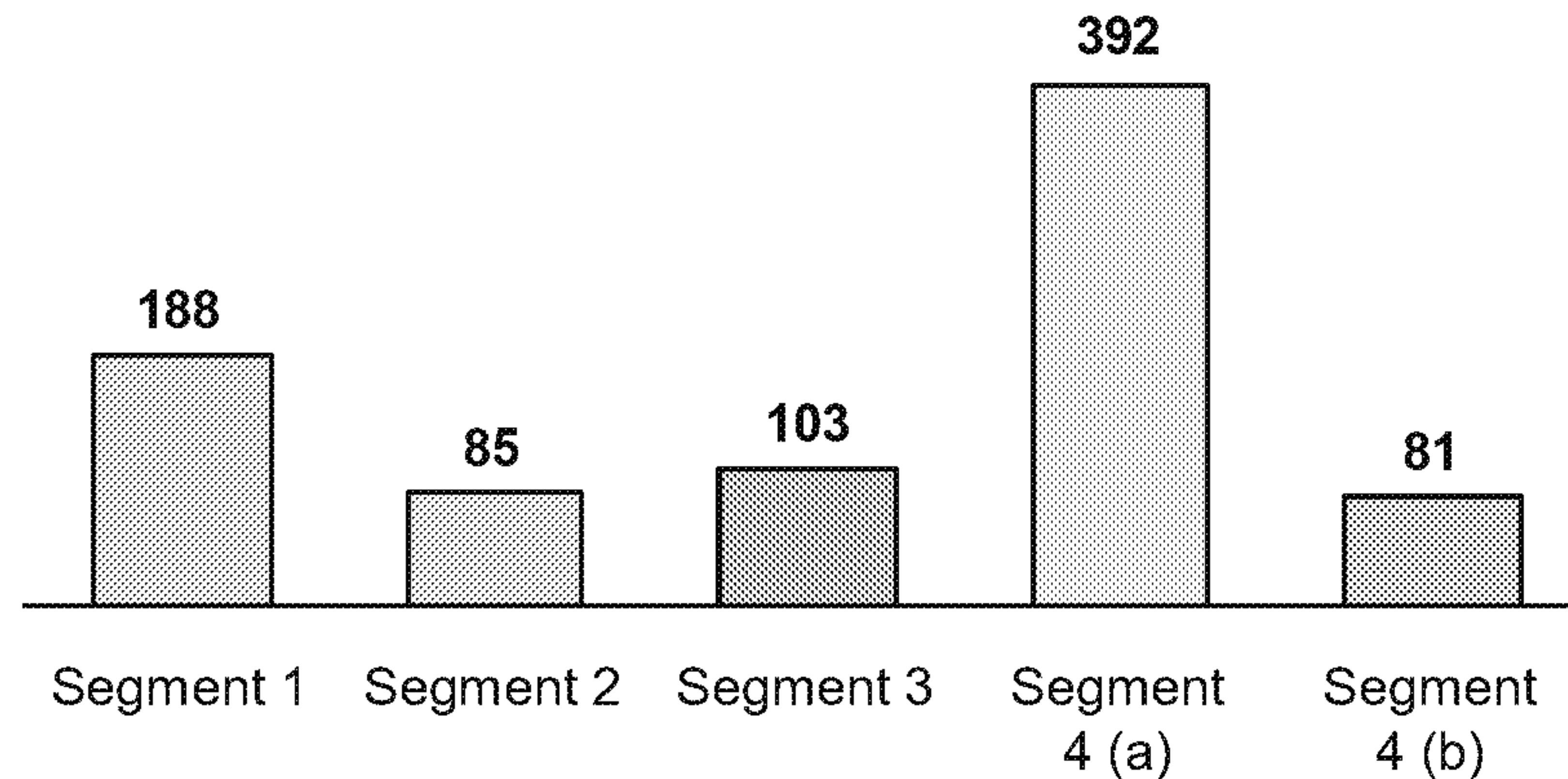
Market Segmentation

Four segments with different behavior based on different economics, channel structure, competitive presence, and target consumers (1/2)

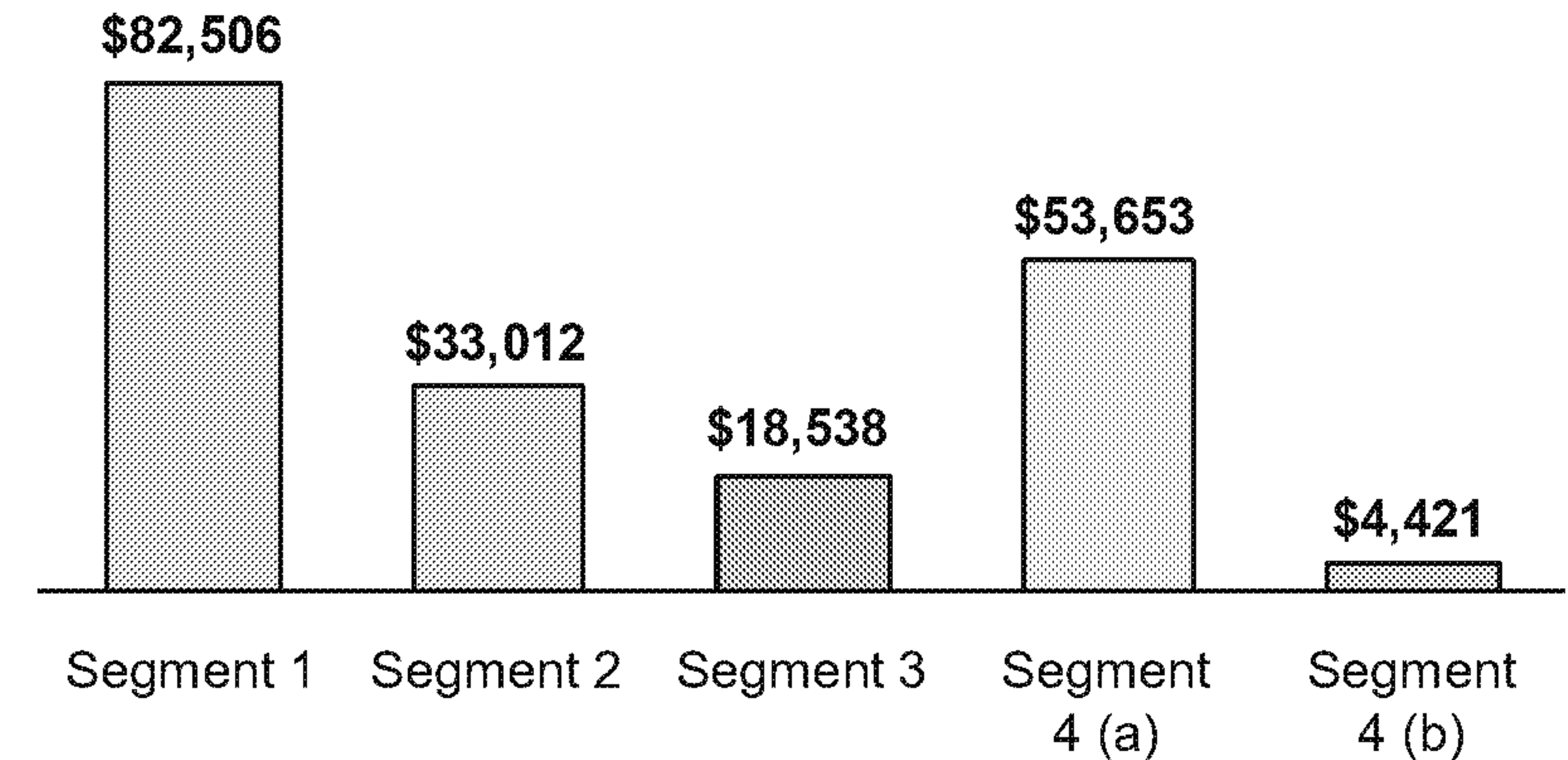
	Segment 1 <i>Premium, subsidized, carrier driven markets</i>	Segment 2 <i>Premium, unsubsidized, retail driven markets</i>	Segment 3 <i>Mid-low tier, largely pre-paid or tier-2 post-paid, carrier driven markets</i>	Segment 4 (a) <i>Mid-low tier, value, and retail driven markets</i>	Segment 4 (b) <i>Ultra-low tier, price, and retail driven markets</i>
Region	NAM, UK, FR, DE, KR, JP, MX	China, India, BR, ARG, MEA, CEE	NAM, UK, FR, DE, KR, JP, LATAM	WE, LATAM, China, India, CEE, MEA	LATAM, China, India, CEE, MEA
Price Tier	>\$300 (Premium)	>\$300 (Premium)	\$75-\$300 (mid-low tier)	\$75-\$300 (mid-low tier)	<\$75 (ultra low)
Subsidy	High Subsidy	No Subsidy	No Subsidy	No Subsidy	No Subsidy
Dominant Channel	Tier-1 Carriers	Retail	Carrier	Retail	Retail
Post / Pre-paid	>80% post-paid	>80% pre-paid	60% post-paid, 40% pre-paid	>80% pre-paid	>90% pre-paid
Average ARPUs	\$60-\$70	\$30-\$50	\$20-\$30	\$5-\$20	\$2-\$10
OEM competitive presence	Apple, Samsung	Apple, Samsung	Apple weak; Samsung leads; rest fragmented among "other" six international players	Samsung leads, Nokia large but declining; rest fragmented among "other" five international players	"White Box" and Local OEMs
Consumer Price sensitivity	Low	Medium	High	High	High
Units 2014 (m)	188	85	103	392	81
Units Growth 2014-15	1%	30%	8%	19%	68%
Sales 2014 (\$ bn)	\$82,506	\$33,012	\$18,538	\$53,653	\$4,421
Sales Growth (2014-15)	-4%	29%	9%	19%	61%
ASP 2014 (\$)	\$439	\$389	\$180	\$137	\$54
ASP Δ from 2010-14 (%)	-2%	-7%	-24%	-27%	-11%
GM 2014 (\$ bn)	\$33,432	\$14,108	\$5,126	\$12,423	\$484

Four segments with different behavior based on different economics, channel structure, competitive presence, and target consumers (2/2)

Units by segment (m Units, 2014)



Sales by segment (\$ m, 2014)



Regions	>\$400	\$301-\$400	\$201-\$300	\$151-\$200	\$101-\$150	\$75-100	<\$75	TOTAL
Others	34.7	18.1	26.2	25.4	28.8	20.7	11.5	165.4
CEE	3.8	4.9	18.4	18.0	11.1	3.6	1.7	61.6
MEA	7.9	8.5	14.5	16.5	14.4	13.3	12.2	87.3
BR, ARG	2.6	1.9	3.8	6.3	12.0	13.6	14.9	55.0
Mexico	1.7	0.9	1.5	3.9	3.0	4.3	2.8	18.1
India	4.5	5.8	2.8	5.1	12.2	15.8	5.9	52.0
China	29.9	15.1	24.8	25.5	49.9	48.7	43.7	237.6
KR, JP	48.6	14.7	3.2	0.0	0.0	0.0	0.0	66.5
UK, FR, DE, IT, ES	18.2	14.3	27.9	20.9	18.3	11.6	10.3	121.5
NAM	64.8	24.6	20.1	22.4	19.4	8.4	0.0	159.8
TOTAL	216.7	108.9	143.2	144.1	169.1	139.9	103.1	1024.9

Source: Profit Pools Strategy Group published July 2012

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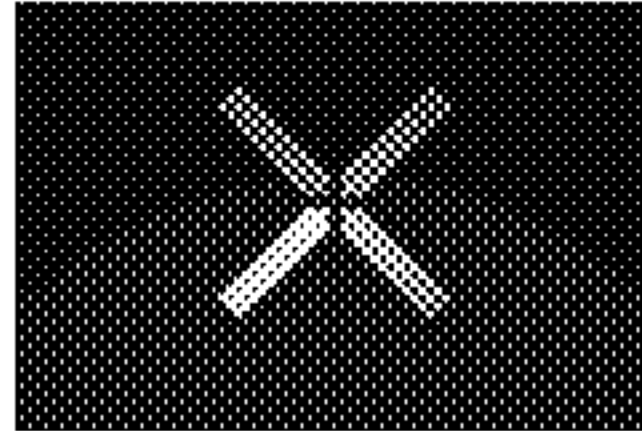





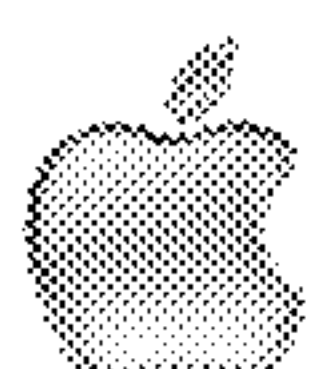
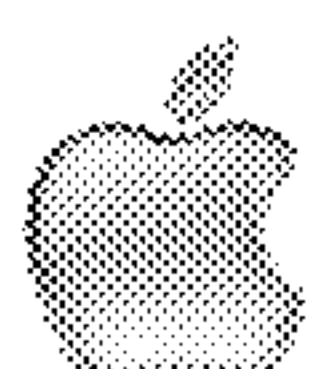

Winning in these Segments will Likely Require Different Strategies

Segment	What will it take to be successful
1. Premium, subsidized, carrier driven markets	<ul style="list-style-type: none"> • Top class look and feel – “Blind test” users will pick up our phones • Breakthrough performance jump in areas we own (e.g. 1 week battery life) • 1-3 unique customer experiences (e.g. UI or Predictive Capability)
2. Premium, unsubsidized, retail driven markets	<ul style="list-style-type: none"> • Unique, “wow” products and user experiences (Halo effect) • Disruptive upfront device acquisition costs (Financing, e.g. Googlecard) and TCO (Access, e.g. MVNO model) vis-à-vis Samsung and Apple • Global scale in distribution
3. Mid-low tier, largely pre-paid or tier-2 post-paid, carrier driven markets	<ul style="list-style-type: none"> • Sweet spot pricing (\$100) • Disruptive models to lower TCO (e.g. MVNO model, Freezone) • Accessories, financing/cash flow models • Subsidizing HW through sustainable revenue streams from broader set of new / existing services, tied into the HW (E.g. Payments, Healthcare)
4. Mid-low tier, price, value, and retail driven markets	<ul style="list-style-type: none"> • Sweet spot pricing (<\$75) • Vertical component integration to sustain low prices • Global scale in distribution • Disruptive models to lower TCO • Subsidizing HW through sustainable revenue streams from broader set of new / existing services, tied into the HW (E.g. Payments, Healthcare)

AGENDA

1. Perspectives on mobile industry going forward
 2. [REDACTED]/Google strategic choices/options
 3. Lessons from camera + laptop industries
 4. Next steps
-

Google Have 5 Strategic Choices to Win Big:

	Alternative	Examples	Definition
Status Quo	1. Fast integrator		<ul style="list-style-type: none"> Integrates HW and vanilla Android OS (Nexus) Fastest to upgrade Android OS releases Fastest integration of new technologies (LTE) new form factors Not a large scale
	1a. Fast integrator, select innovation	  MOTOROLA	<ul style="list-style-type: none"> status quo Integrates HW with Android OS. Minimal layer of SW differentiation Differentiates on specific themes: power management, authentication, personalization, imaging and assembled in USA Aims to be fast to integrate new technologies, new form factors, etc
Double down as Integrator	2. Option 1 + scale player	 HUAWEI  NOKIA	<ul style="list-style-type: none"> Integrates HW with Android OS Builds global distribution in short term (potential M&A) Builds global brand recognition in short term, or leverages Google brand Lack of in-house component limits cost advantage to cover ultra low tiers
	3. Option 2 + Component integration	 	<ul style="list-style-type: none"> Integrates HW with Android OS Owns strategic components (e.g., battery, processor) Builds strategic partnerships securing access Achieves cost advantage by combines scale + in-house components Best positioned for sustaining low prices
Alternative Models	4. Integrated user experience	 	<ul style="list-style-type: none"> Integrates HW with proprietary closed SW (may be Android, Chrome or other Google services) Full control over roadmap and experiences Best positioned to improve user experience
	5. Subsidized HW with Services		<ul style="list-style-type: none"> Give away Smartphone to a billion users, and enable broad set of services and business models, tying into the hardware

Each Alternative Requires Motorola to Place Key Bets and Prepare for Risks:

Alternative	Source of Differentiation	What it takes to succeed	Example of bets / moves
1. Fast integrator	<ul style="list-style-type: none"> BIC fast integrator Time to market Brand 	<ul style="list-style-type: none"> Top 1-3 brand known for quality Renowned for customer support (best warranty, etc) 	<ul style="list-style-type: none"> High marketing spend to build brand Above and beyond warranty support
1a. Fast integrator with select innovation	<ul style="list-style-type: none"> BIC fast integrator Differentiate w/ selected themes: personalization, imaging, authentication, battery power, made in USA 	<ul style="list-style-type: none"> High consumer appeal for selected experiences Yet, minimal layer to ensure fast Android OS upgrades/releases 	<ul style="list-style-type: none"> M&A or strategic partnership with APTINA or others for array High marketing spend on selected themes
2. Option 1 + scale player	<ul style="list-style-type: none"> Fast integrator + Offers good value Global distribution Negotiating power w/ suppliers, carriers 	<ul style="list-style-type: none"> Strong distribution, share (M&A) Strong brand (M&A), or Google brand Disrupt data cost, lower TCO Pre-buy component at low cost, lock low prices and 1st access 	<ul style="list-style-type: none"> M&A of RIM, HTC, LG or Nokia to quickly grow distribution Reposition brand: "Moto by Google" M&A of MVNO to disrupt subsidy in US Strategic partnerships with Qualcomm
3. Option 1 + scale + Component integration	<ul style="list-style-type: none"> Able to sustain lowest prices Closer to technology trends Global distribution Negotiating power w/ suppliers, carriers 	<ul style="list-style-type: none"> In-house manufacturing of components that are either scarce, high cost, or represent new-wave of technology 	<ul style="list-style-type: none"> M&A of RIM, HTC, LG or Nokia to quickly grow global distribution M&A or strategic partnerships to develop components in-house: LCD sensors, display, apps processor, GPU
4. Integrated user experience	<ul style="list-style-type: none"> WOW experiences Proprietary ecosystem IP 	<ul style="list-style-type: none"> Experiences wow consumers BIC content and services Strong ecosystem- attract developers Quickly react to consumer/ tech trends 	<ul style="list-style-type: none"> Integrate with Google products (non-Android) at risk of impacting Android partners Start growing developer ecosystem for new selected OS
5. Subsidized HW with services	Breakeven of cost and revenue per device between 2017-2020		

High Level Assessment of Options

	Innovative Brand	Sustained Success	Max Reach Potential (M Units Annual)	Profit Potential (Annual) (in steady state, success)			Proxies for Investment Requirement (\$B)		
				HW GM \$B; % rev	HW OE \$B; % rev	Mobile Adv GM \$B	M&A	R&D	S&M
1. Fast Integrator, selective innovations	Fleeting	No roadmap control	18M	\$2.1 (26%)	\$0.2 (3%)	\$0.4 (80%)	\$0	~1 Mot	~1 Mot
2. Fast Integrator + scale Player	Not focus on innovation	No component cost control	108M	\$5.1 (21%)	\$2.6 (11%)	\$1.0 (80%)	E. Value NOK: \$8B; HTC: \$5B; LG: \$17B;	~1.5 NOK	~1.5 NOK
3. Fast Integrator + scale + Component Integration	Quality brand: Innovation in key components and device	Cost and roadmap control	199M	\$11.9 (27%)	\$7.5 (17%)	\$2.0 (80%)	E. Value Nvidia: \$4B Mediatek \$13B + NOK \$8B; HTC \$5B; LG \$17B	~3 SAM	~3 SAM
4. Integrated User Experience	Best position for delivery of WOW experiences	Control user experience	80M	\$13.4 (38%)	\$9.5 (27%)	\$1.7 (80%)	TBD	~3 APPL	~5 APPL
5. Subsidized HW with services	Breakeven of cost and revenue per device between 2017-2020								

The Risk of Samsung forking exists across all options

Source: [REDACTED] strategy group, Gartner share, 2015 Profit Pools 07/12; e-Marketer mobile ad spend per internet user

* Based on 2014 TAM 1B smartphones

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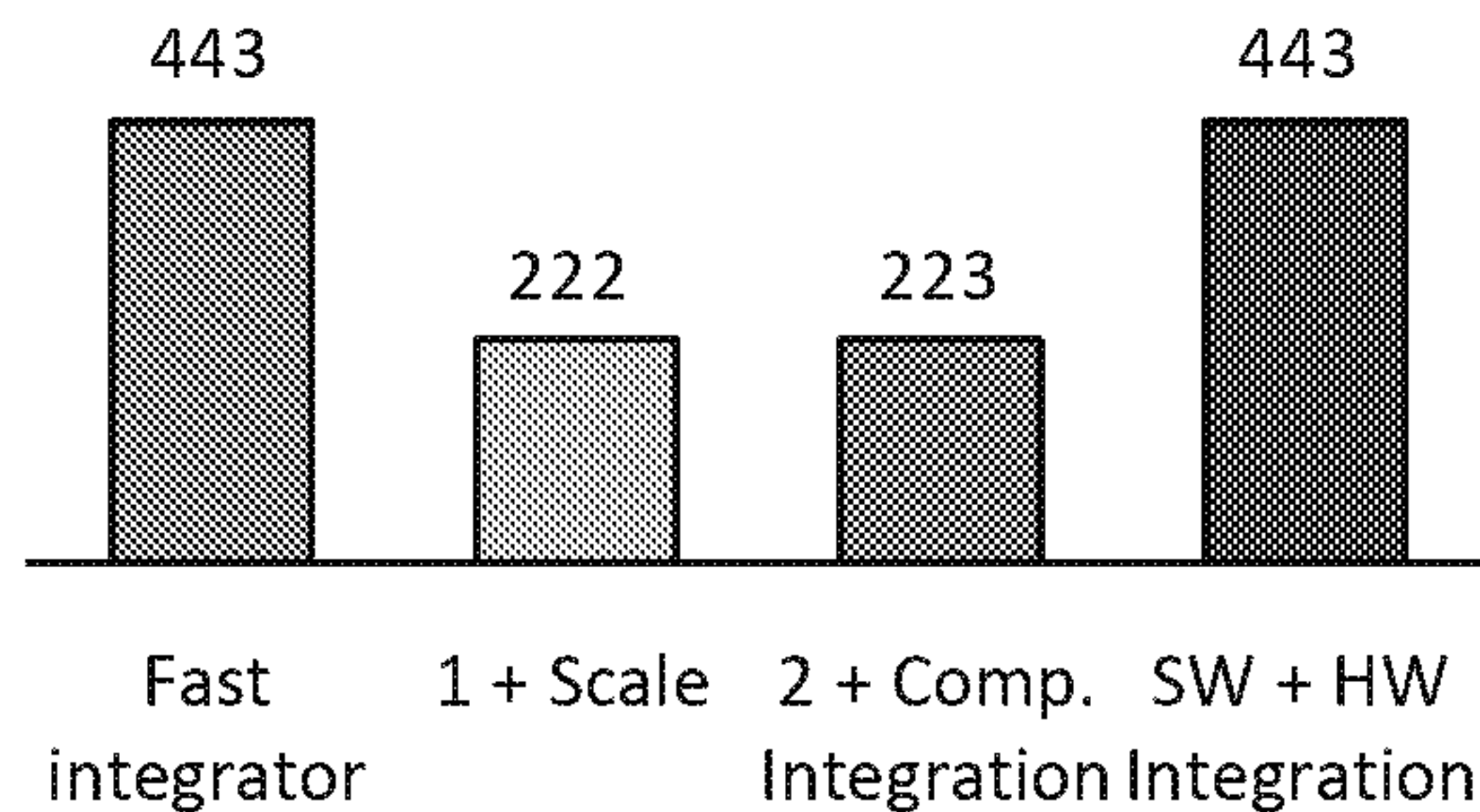
Assumption Overview: Strategic Alternatives Max Opportunity:

Share Assumptions by Segment:

Segments	Regions Proxy	ASP	Fast Integrator Motorola	Scale Nokia	Scale + Component Integration Samsung	SW + HW Integrated Apple '12; RIM '09
Segment 1	NAM, UK, FR, DE, KR, JP, MX	>\$300	7%	10%	20%	30%
Segment 2	China, India, BR, ARG, MEA, CEE	>\$300	7%	10%	20%	30%
Segment 3	NAM, UK, FR, DE, KR, JP, MX	\$75-\$300		20%	33%	
Segment 4 (a)	WE, ROLA, BR, China, India, CEE, MEA	\$75-\$300		20%	33%	
Segment 4 (b)	All LATAM, China, India, CEE, MEA	<\$75			33%	
Share 2014 TAM	TOTAL		2%	11%	20%	8%
M Units			18	108	199	80

ASP Assumptions (\$)

- Blended average, based on mix

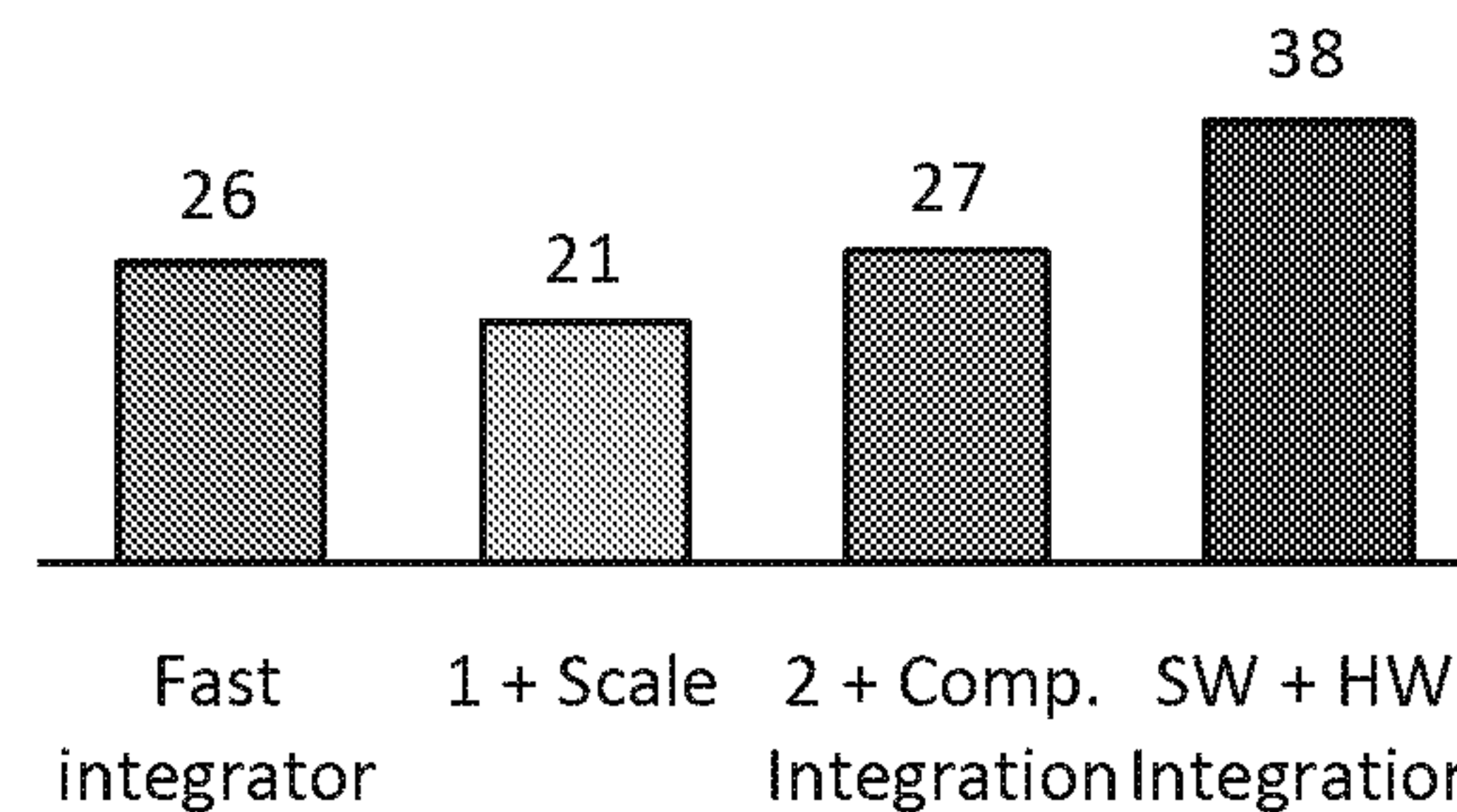


Sales (\$B)

\$7.9	\$24.0	\$44.4	\$35.2
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GM % Assumptions

- Informed by OEM proxies, informed by profit pools tier analysis, declining GM% trend

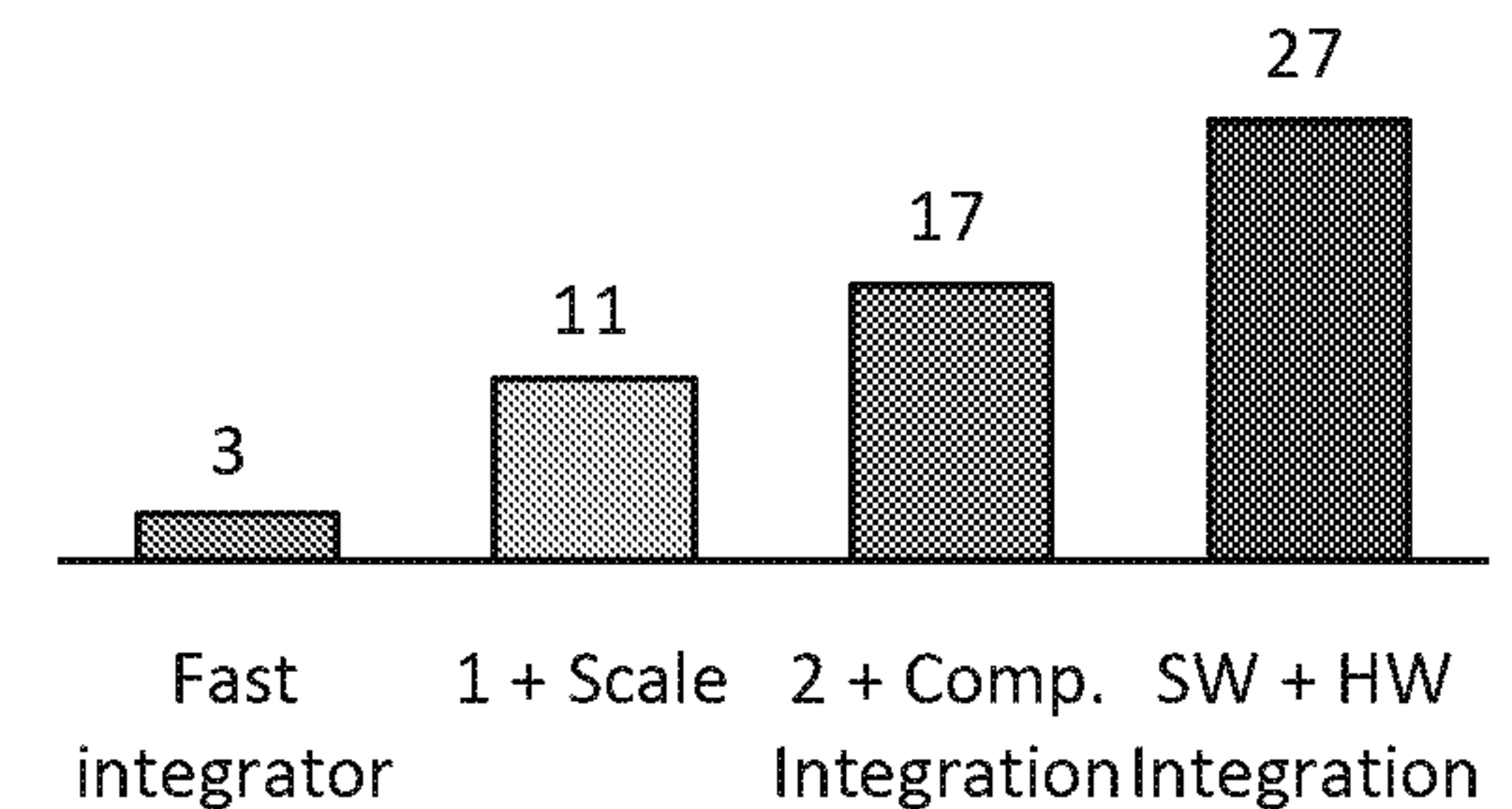


GM (\$B)

\$2.1	\$5.1	\$11.9	\$13.4
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OE Assumptions (%)

- Informed by OEM proxies



OE (\$B)

\$0.2	\$2.6	\$7.5	\$9.5
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AGENDA

1. Perspectives on mobile industry going forward
 2. Motorola/Google strategic choices/options
 3. Lessons from camera + laptop industries
 4. Next steps
-

Key Takeaways from Laptop and Camera Industries:

- Inevitable ASP decline across HW industries:
 - Laptop ASP declined at a -9.0% CAGR from 2000-12
 - Camera industry ASPs declined at a -13% CAGR between 2003-11
 - The innovator leader maintains higher ASPs vs. industry and significantly higher profits
- Winners pick their battles and investment focus; avoid distractions:
 - Innovation leaders control selected strategic components.
 - Apple SW, in-house tech development of PCs
 - Canon 100% production in-house; Nikon 20% production in-house
 - Innovation leaders own or influence strategic parts of the ecosystem :
 - Apple retail stores,
 - Nikon high investment in CE stores
 - Mass markets leaders: combine reliable brand, broad distribution and fast to market advantages (HP, Sony)
 - Mass market leaders: Low OE \$

Summary of Key Facts Learnt from Analyzing Other HW Industries:

Type of Leader		Laptop /PC	Cameras
ASP evolution	Industry	Apple differentiated via OS - ASP only fell 33%	Prices declined at a 13% CAGR from 2003-11
	Innovation Leader	HP –fast integrator- ASP declined	TBD
	Scale Leader	Apple 00-12: from 3% -12%; Rev share 53% to 73%	TBD
Market Share	Innovation Leader	HP 00-12: from 21% -15%. Lenovo and low tier players eat share from low tiers	High-end DSLR: Canon (59%) and Nikon (33%) stable share
	Scale Leader	Apple innovates across the business	Compact camera: Nikon from 6% to 13% (#3) by investing in distribution; Canon from 17% to 15%. (#2)
Innovation	Innovation Leader	Incremental HW based. Fast to market matters	Canon: strongest IP. 100% in-house manufacturing
	Scale Leader	Service providers ~48%; Intel 19%; Microsoft 14%; HW 19% (Apple 8%, 11% Others led by HP)	Sony: Fast follower
Profitability	Ecosystem	Apple takes half of PC HW profits	Industry OE fell post 2008. Low tier cannibalized by smartphone; stable in last few years
OEM Profitability	Innovation Leader	HP follows Apple with 20% if HW profits	Canon has higher operating profit – does not pass margin to ODM – struggling with TTM
	Scale Leader	Vertically Integrated: OS+ HW+ Supply chain, retail Innovate across business, build halo, build loyalty	Sony CE division boarder line profitable (Camera is 18% of segment)
Key Lessons	Innovation	HP: Largest distribution network, reputable brand, fast to market; leverage M&A for growth	Canon: Strong R&D, strongest IP, 100% in-house Nikon: Quality brand; Fast to market, strong channel distribution (CE stores)
	Scale	Apple differentiated via OS - ASP only fell 33%	Sony: leverages distribution, CE brand, distribution not known for innovation

AGENDA

1. Perspectives on mobile industry going forward
 2. Motorola/Google strategic choices/options
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 4. **Next steps**
-

Proposed Next Steps

- Technology strategy; framework
- Corporate Strategy; supplier ecosystem

Innovation Strategy: Framework

BACKUP

Quick Comparison of Laptop vs. Mobile Industry:

Type of Leader		Laptop /PC	Handsets
ASP evolution	Industry	Laptop ASPs fell 67% from 2000-12	Handset ASPs fell 45% from 2008-12 (-19% CAGR)
	Innovation Leader	Apple differentiated via OS - ASP only fell 33%	Apple differentiated via OS - ASP flat
	Scale Leader	HP –fast integrator- ASP declined	Samsung – moving up ASP via higher SP mix
Market Share	Innovation Leader	Apple 00-12: from 3% -12%; Rev share 53% to 73%	Apple 2007-2012: from 0 to 21% SP share & from 0 to 30% Rev share
	Scale Leader	HP 00-12: from 21% -15%. Lenovo and low tier players eat share from low tiers	Samsung 2008-2012 leveraging Android: from 16 to 23% Unit share & from 12 to 29% Rev share
Innovation	Innovation Leader	Apple innovates across the business	Apple: vertical HW+SW model
	Scale Leader	Incremental HW based. Fast to market matters	Samsung: vertical component in house → select innovation, low cost, time to market advantage
Profitability	Ecosystem	Service providers ~48%; Intel 19%; Microsoft 14%; HW 19% (Apple 8%, 11% Others led by HP)	Service providers ~67%; Semis 5%; OS near 0%; HW 27% (Apple 19%, Samsung 8%, rest 0%)
OEM Profitability	Innovation Leader	Apple takes half of PC HW profits	Apple takes 70% of Handset HW profits
	Scale Leader	HP follows Apple with 20% if HW profits	Samsung takes 31% of Handset HW profits
Key Lessons	Innovation	Vertically Integrated: OS+ HW+ Supply chain, retail Innovate across business, build halo, build loyalty	Vertically Integrated: OS+ HW+ Supply chain, retail Innovate across business, build halo, build loyalty
	Scale	HP: Largest distribution network, reputable brand, fast to market; leverage M&A for growth	Samsung: took advantage of commoditization Android created by lowest cost/in-house components – innovation/time to market

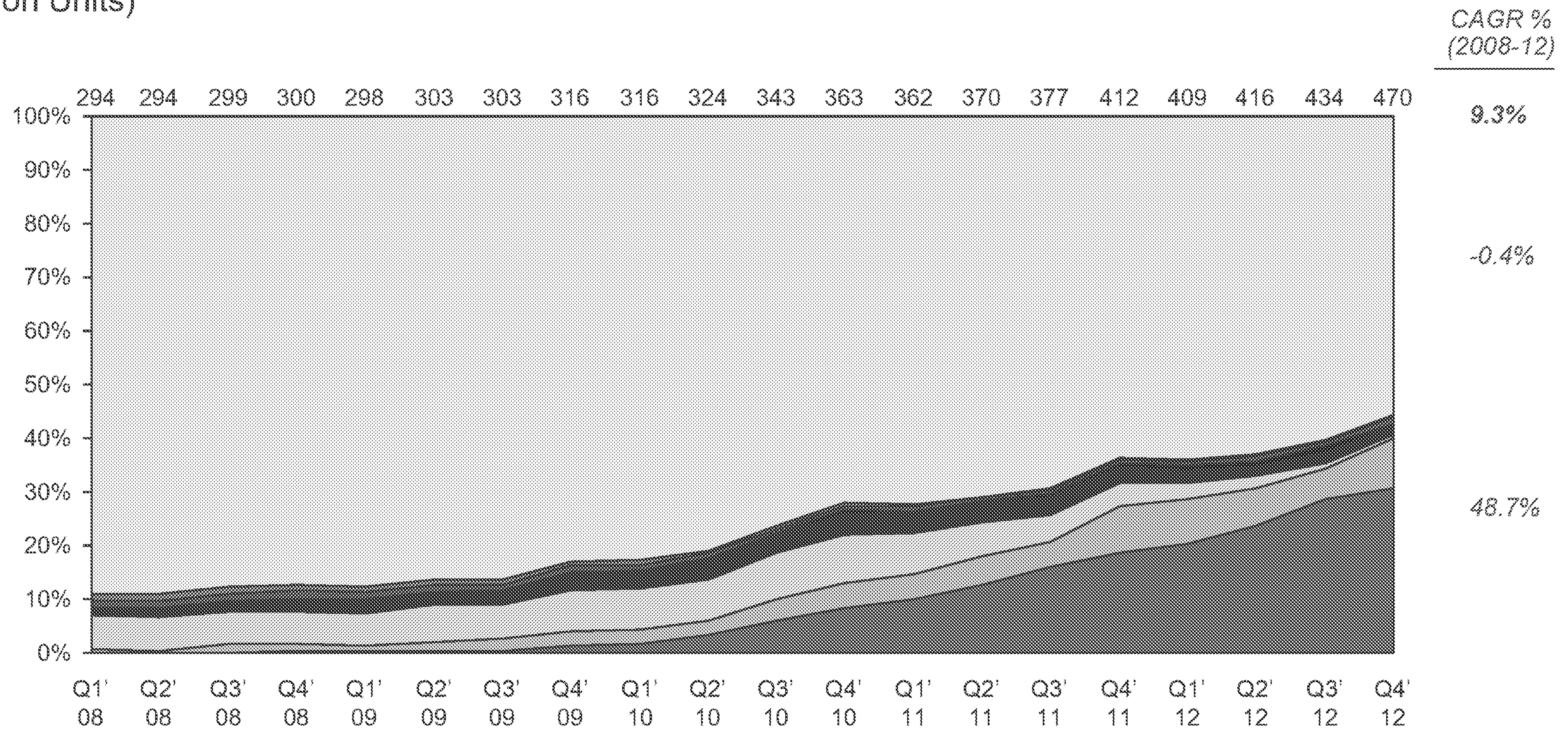
Samsung Cost advantage

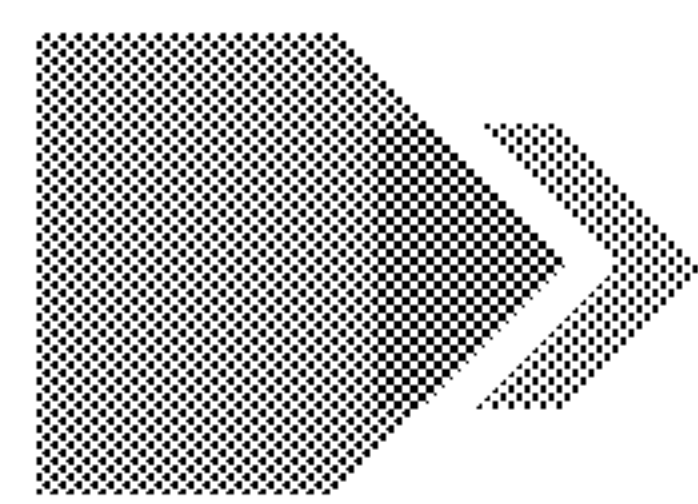
Mobile Industry Backup

Smartphone volume has grown at a rapid pace of ~50% annually since 2008, and is now ~45% of all mobile phone sales globally

Feature Phones SP - Microsoft SP - Research In Motion SP - iOS
 SP - Others SP - Bada SP - Symbian SP - Android

Global Mobile Phones Volume share by platform
 (Million Units)

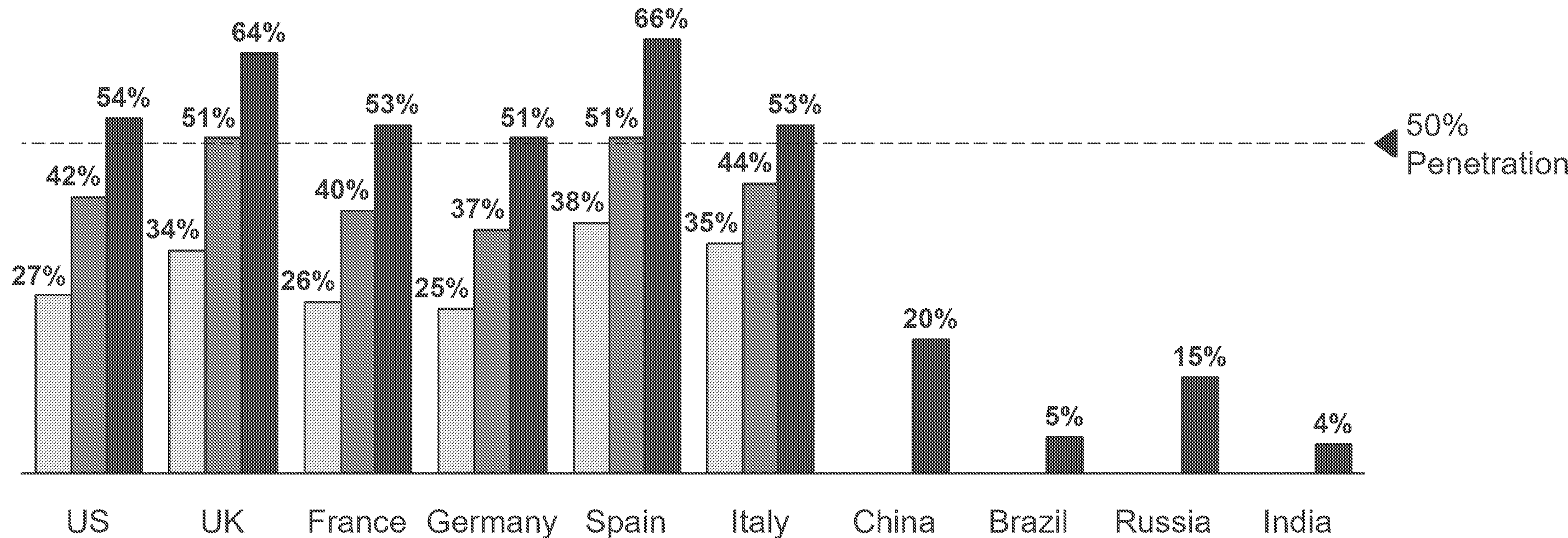




SP penetration in developed markets have crossed 50% and entering “late majority” stage; room to grow in EMs

Percentage of mobile population owning a Smartphone (%)

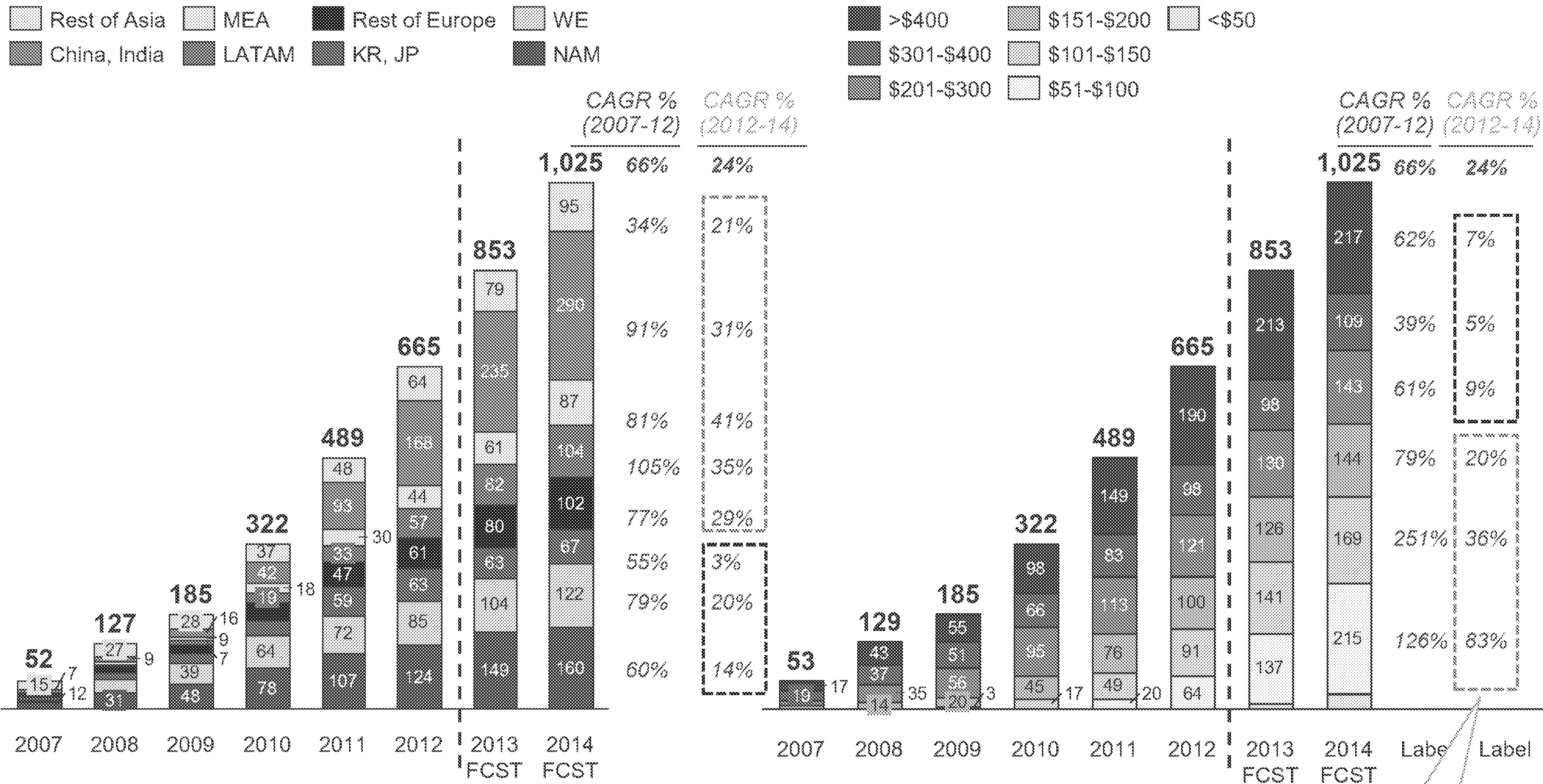
Dec-10 Dec-11 Dec-12



Smartphone growth slowing down in developed countries (NAM, WE, KR, JP), and in higher price tiers (>\$200)

Global Smartphone Volume by Geo and Price Tiers

Million Units, ASP \$USD



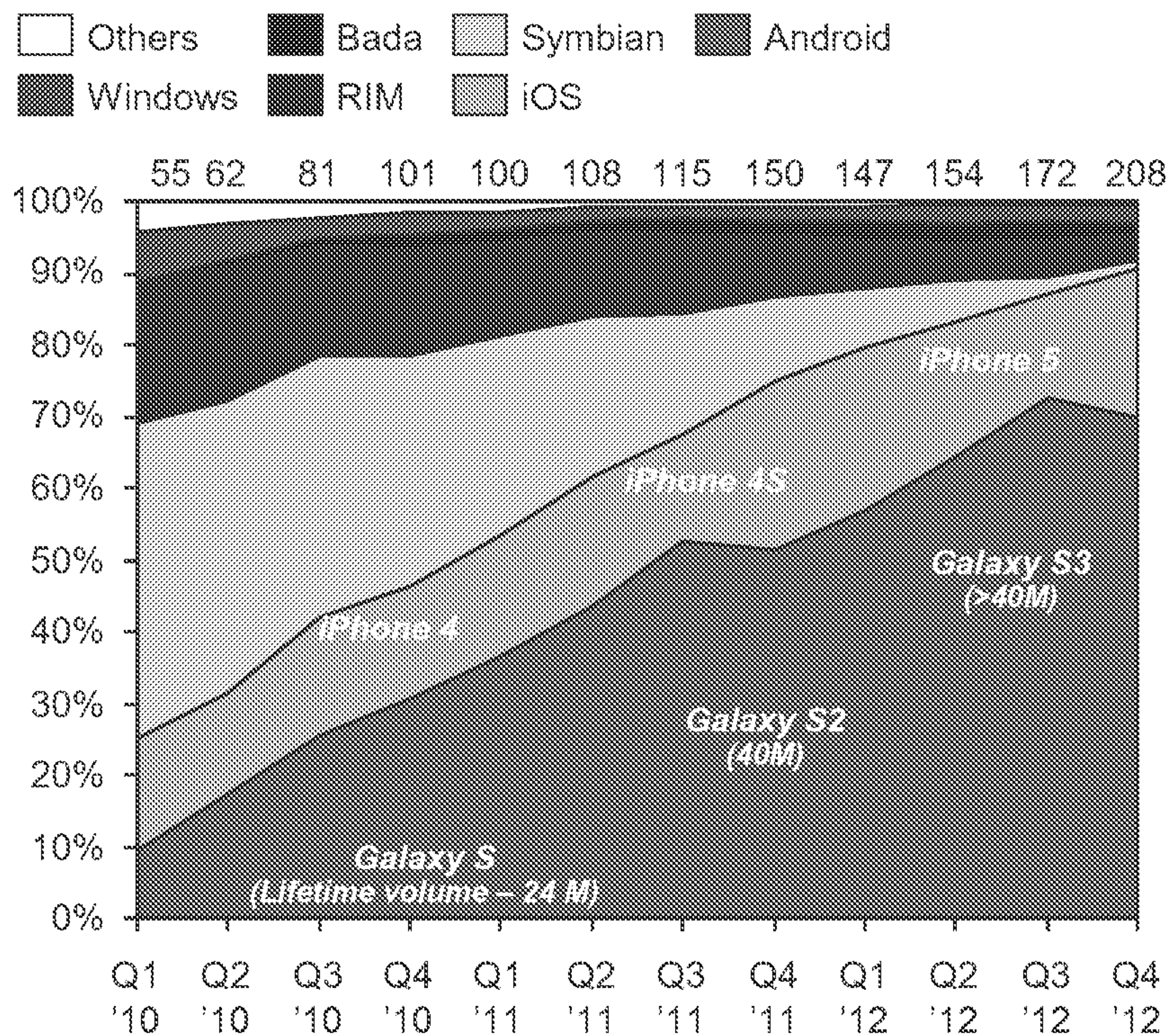
Driven by "late adopter" price-sensitive customers, likely to sacrifice certain features for price, and more basic functionality

Samsung and Apple have captured vast majority of the growth in SPs since '07 with a combined share of 52%; Android extending its leadership with ~70% share

Android and iOS now have a combined share of 91% of the global SP volume, up from 25% in Q1'2010

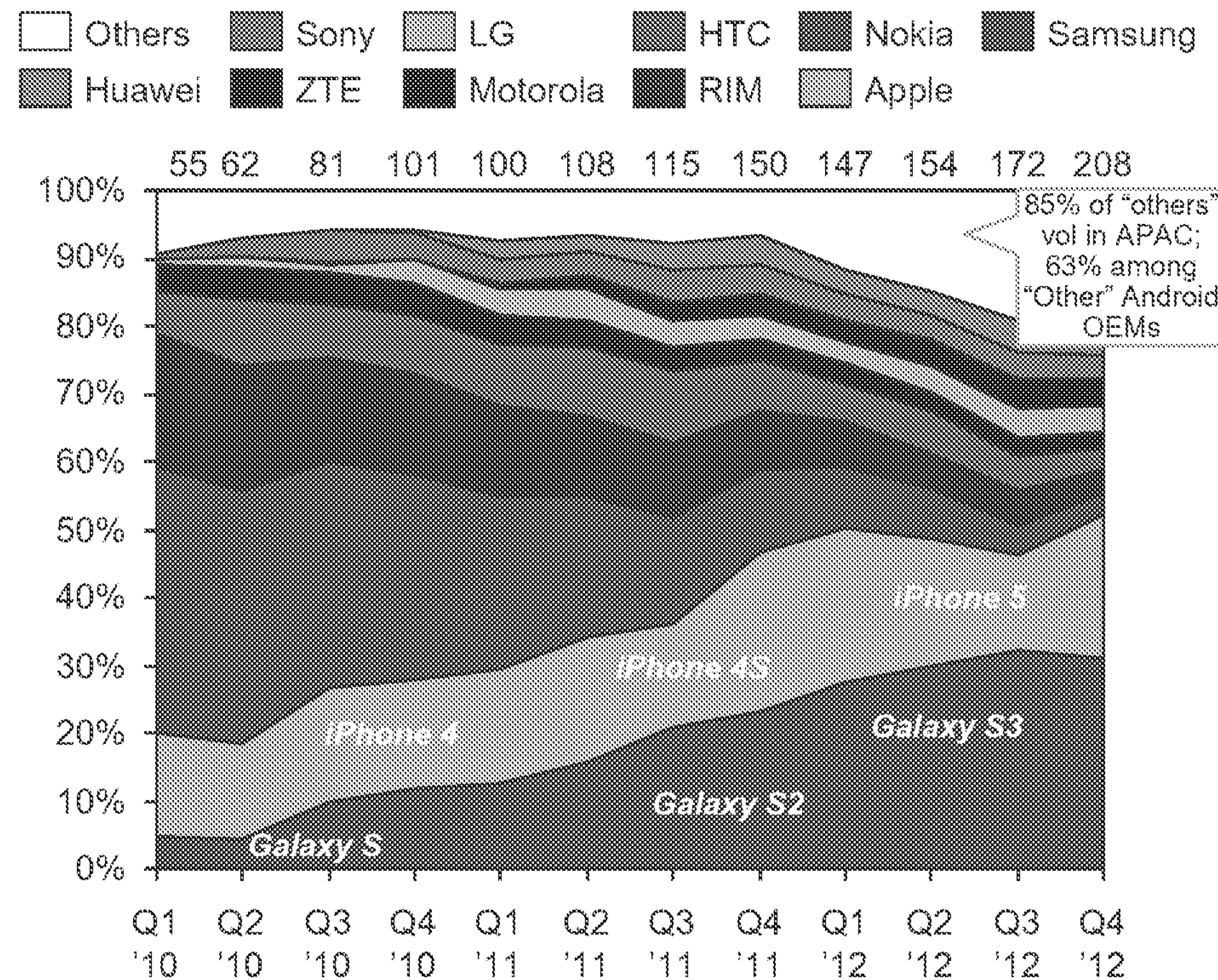
Apple has 21% share, while Samsung has grown to 31% share (and ~half of Android units)

Quarterly smartphone units by OS (M)



IOS as % of total	15%	14%	17%	16%	17%	18%	15%	24%	23%	19%	14%	21%
Android as % of total	10%	17%	25%	30%	36%	43%	53%	51%	57%	64%	73%	70%

Quarterly smartphone units by vendor (M)



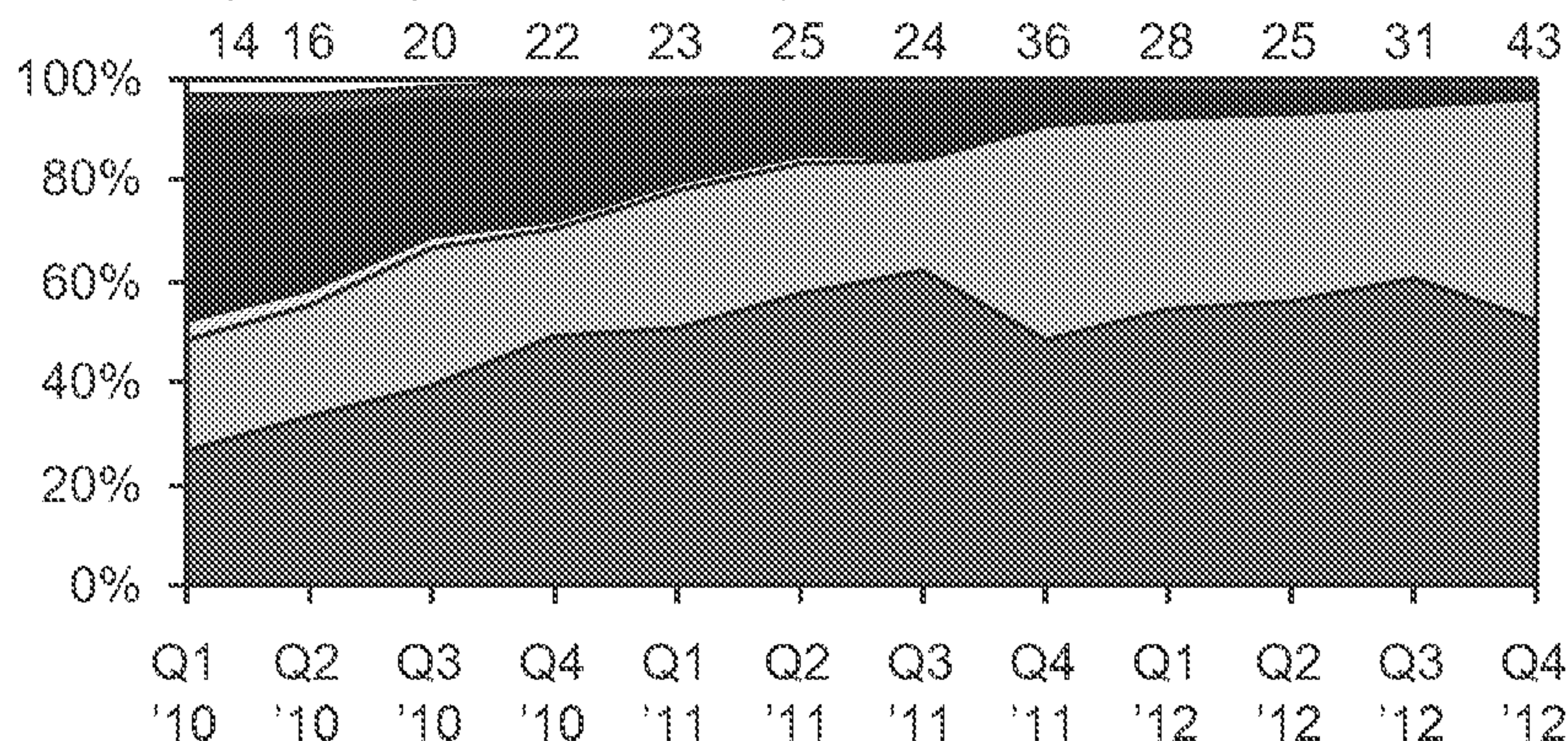
Apple as % of total	15%	14%	17%	16%	17%	18%	15%	24%	23%	19%	14%	21%
Samsung as % of total	5%	4%	10%	12%	12%	16%	21%	23%	28%	30%	32%	31%

Android strong and gaining share rapidly in all regions; iOS gaining share in NAM, stable low share in other regions

Others Windows Bada RIM Symbian iOS Android

North America: Android and iOS have 96% share

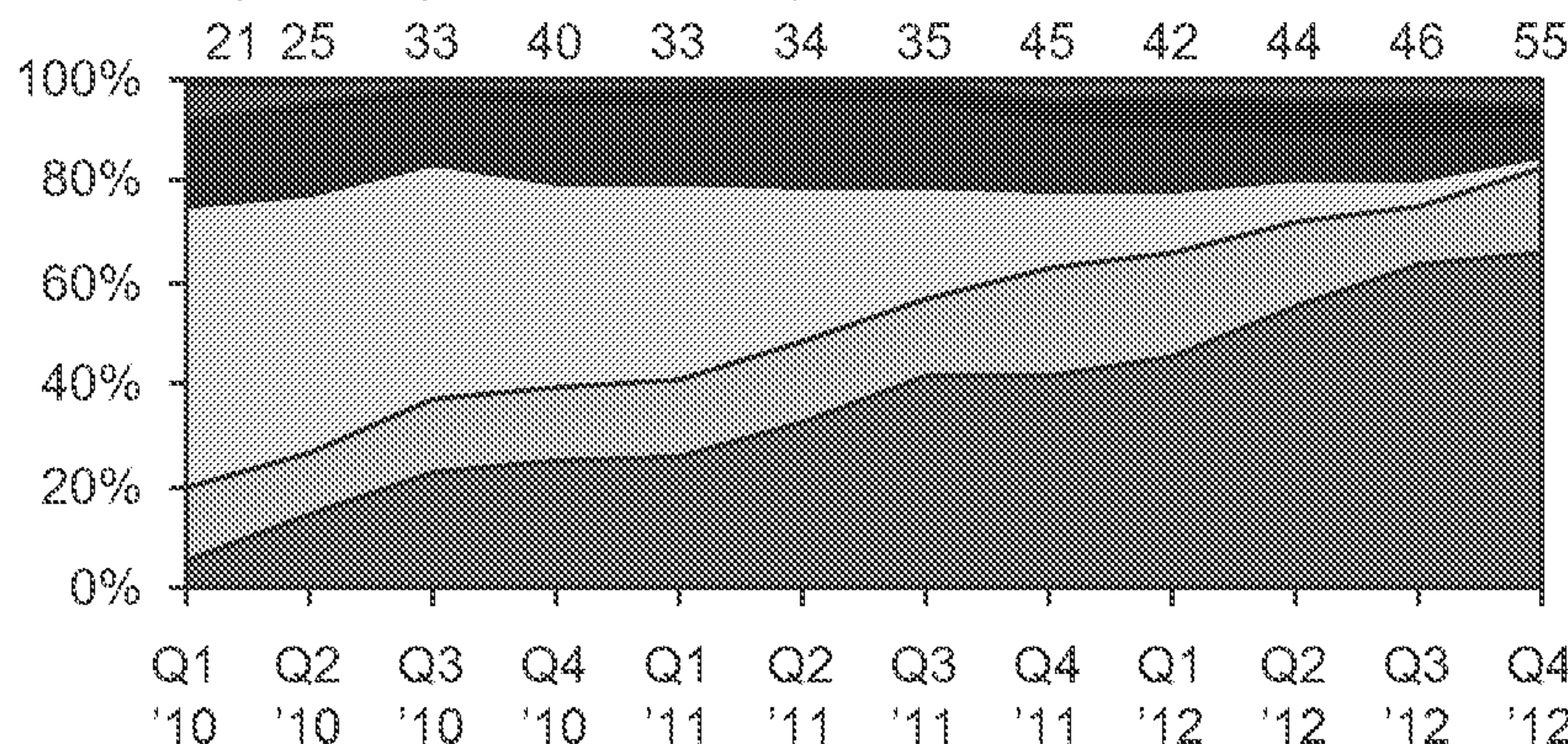
Quarterly smartphone units (M)



Android share 27% 33% 39% 49% 51% 58% 62% 48% 55% 56% 61% 53%

EMEA**: Android and iOS strong with cumulative share if 80%

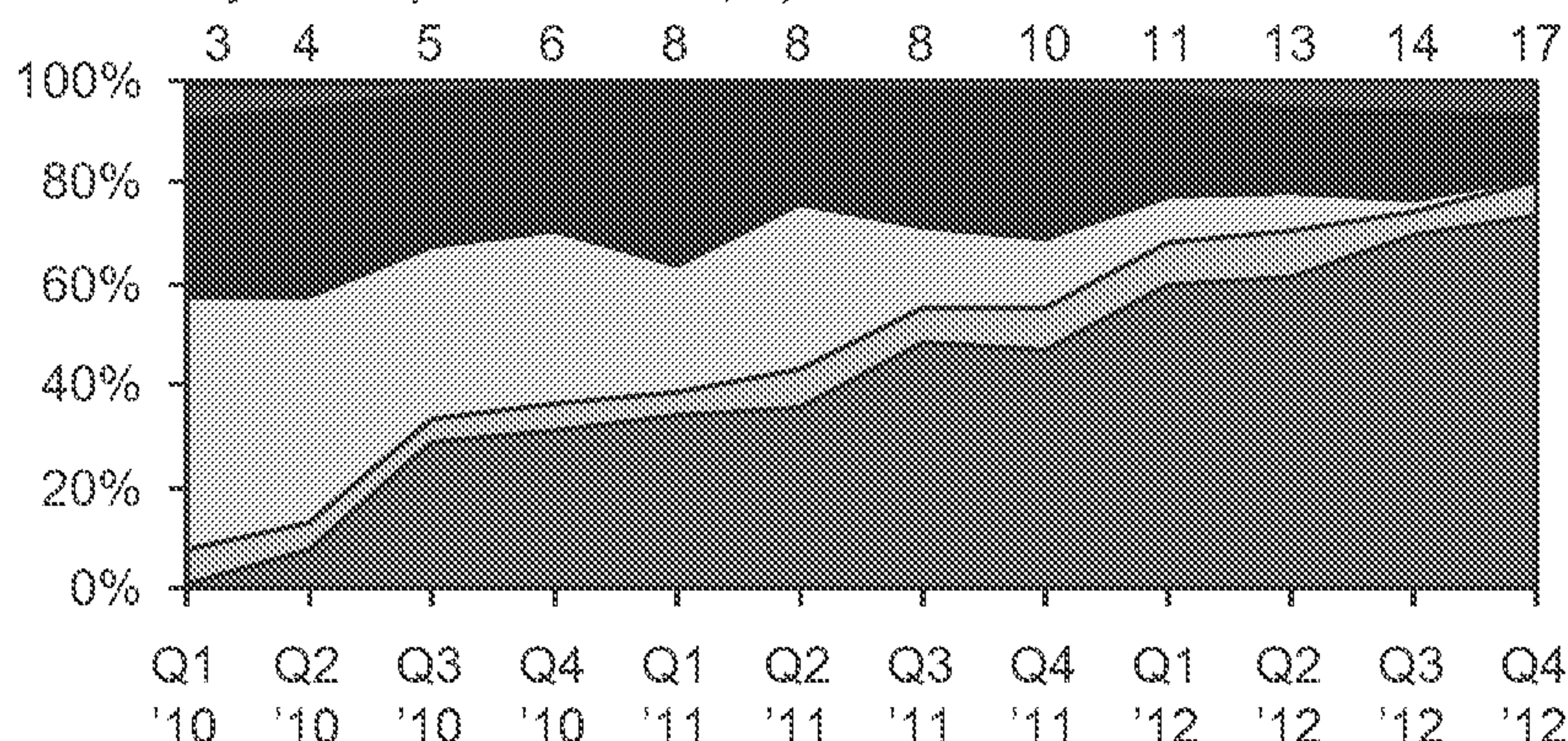
Quarterly smartphone units (M)



Android share 5% 14% 23% 25% 26% 32% 41% 42% 46% 55% 64% 66%

LATAM: Android gaining rapidly; iOS stable with low share

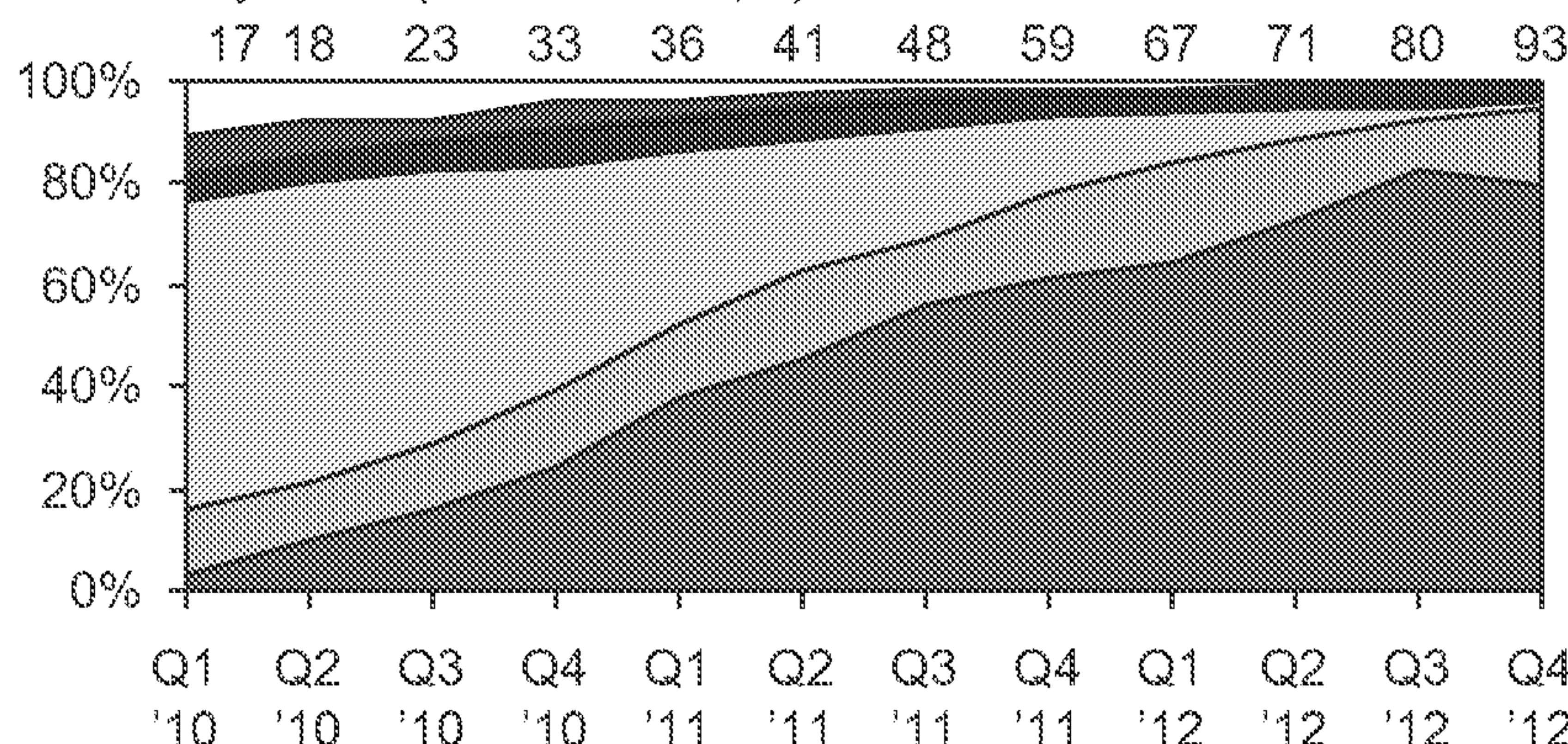
Quarterly smartphone units (M)



Android share 1% 8% 29% 31% 34% 36% 49% 47% 60% 61% 70% 74%

APAC: Explosive growth of Android; iOS making slow in-roads

Quarterly smartphone units (M)



Android share 3% 9% 16% 24% 38% 46% 56% 61% 64% 73% 83% 79%

** EMEA includes Western Europe + Central & Eastern Europe + Middle East and Africa regions

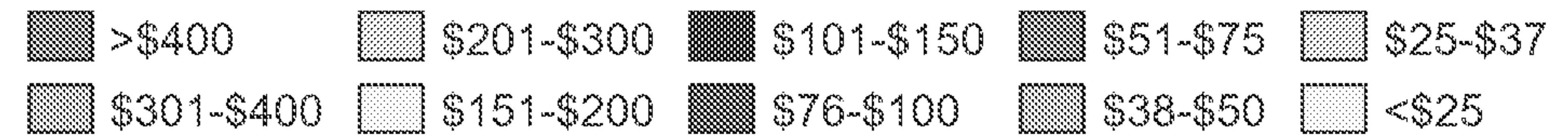
Source: Gartner, by Region and Country, 4Q12

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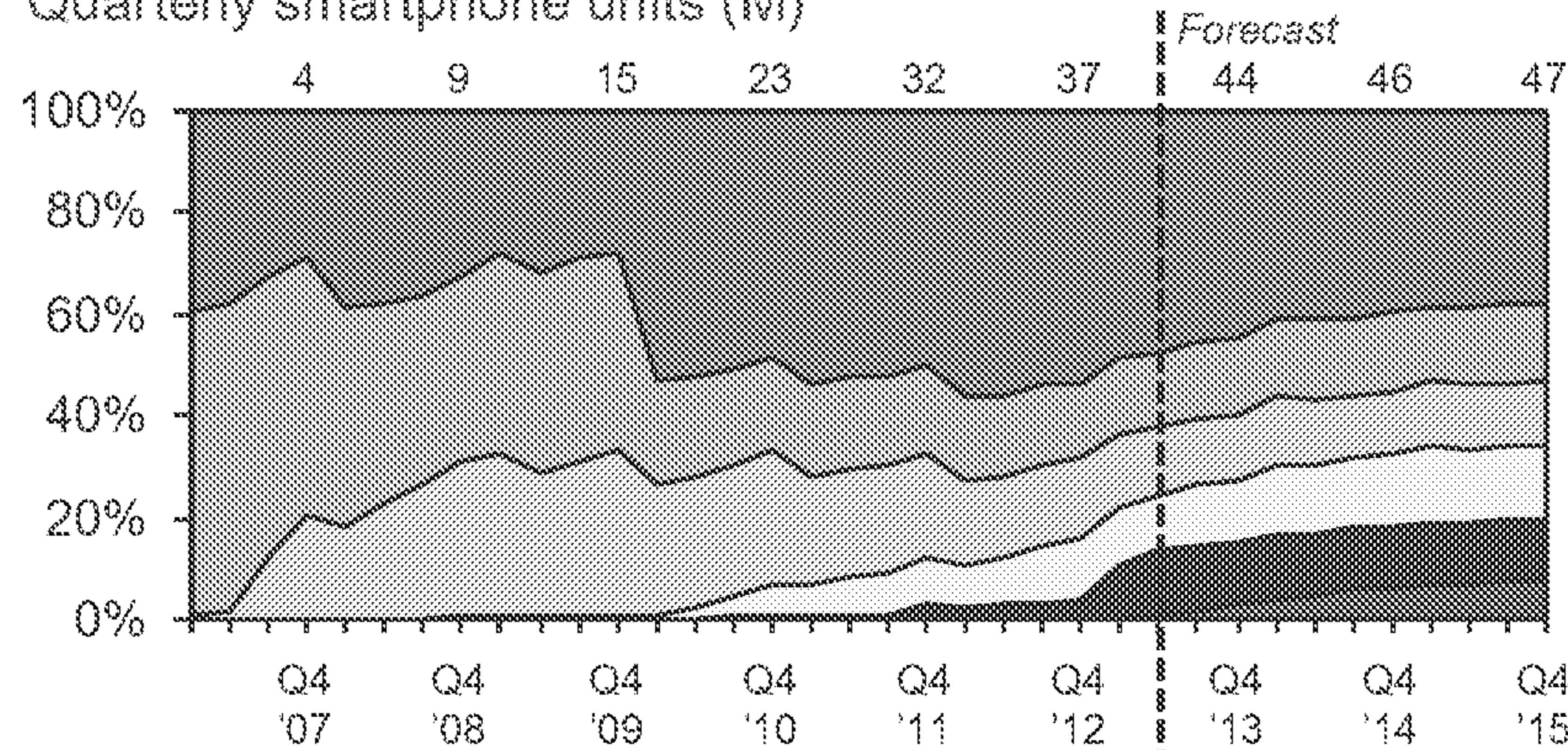
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>\$200 SP volume share shrinking rapidly across all regions; \$75-\$150 growing fast



North America: Strong high-tiers owning to high carrier subsidies for OEM flagships

Quarterly smartphone units (M)

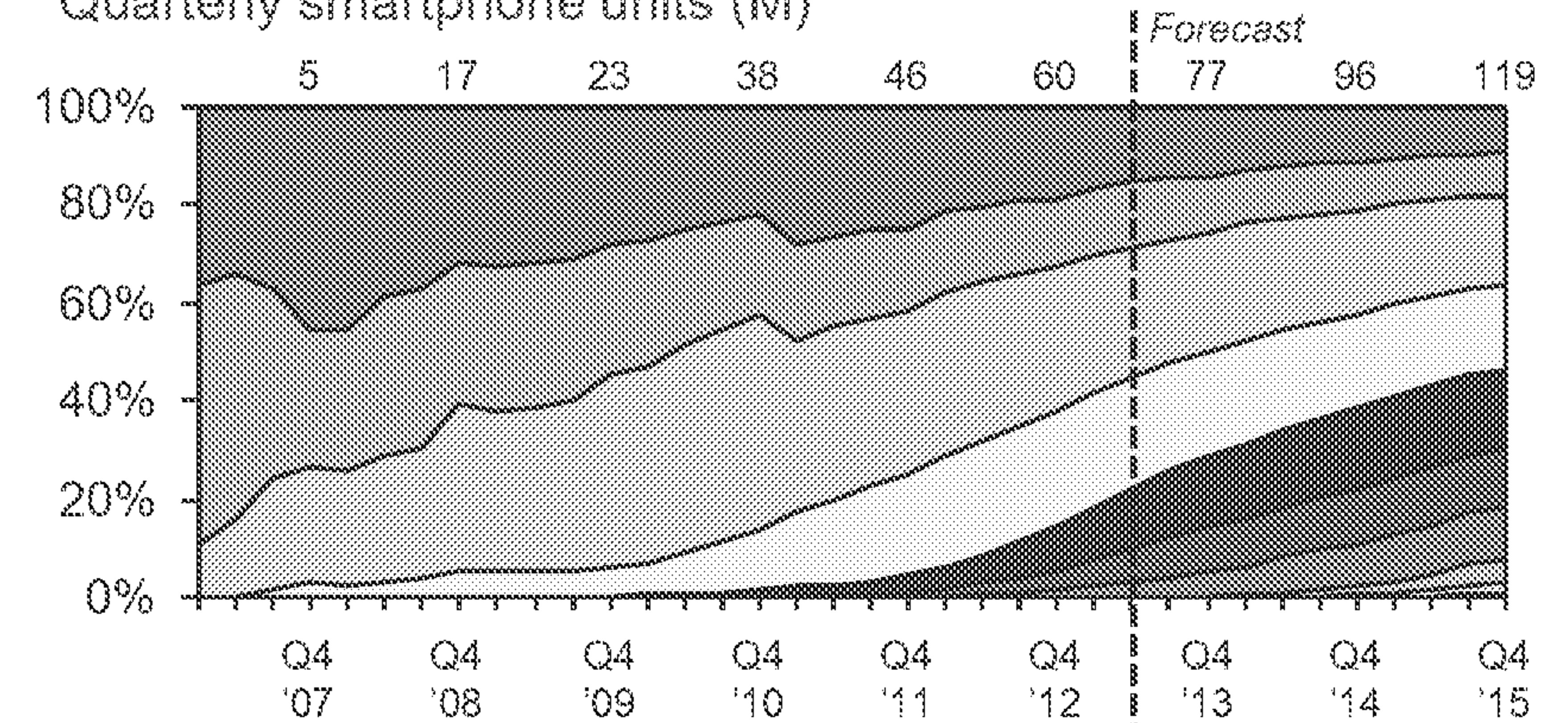


Share of >\$400 SP

Quarter	Share (%)
Q4 '07	29%
Q4 '08	32%
Q4 '09	28%
Q4 '10	48%
Q4 '11	50%
Q4 '12	54%
Q4 '13	45%
Q4 '14	40%
Q4 '15	38%

EMEA**: Mid and low tiers driving growth

Quarterly smartphone units (M)

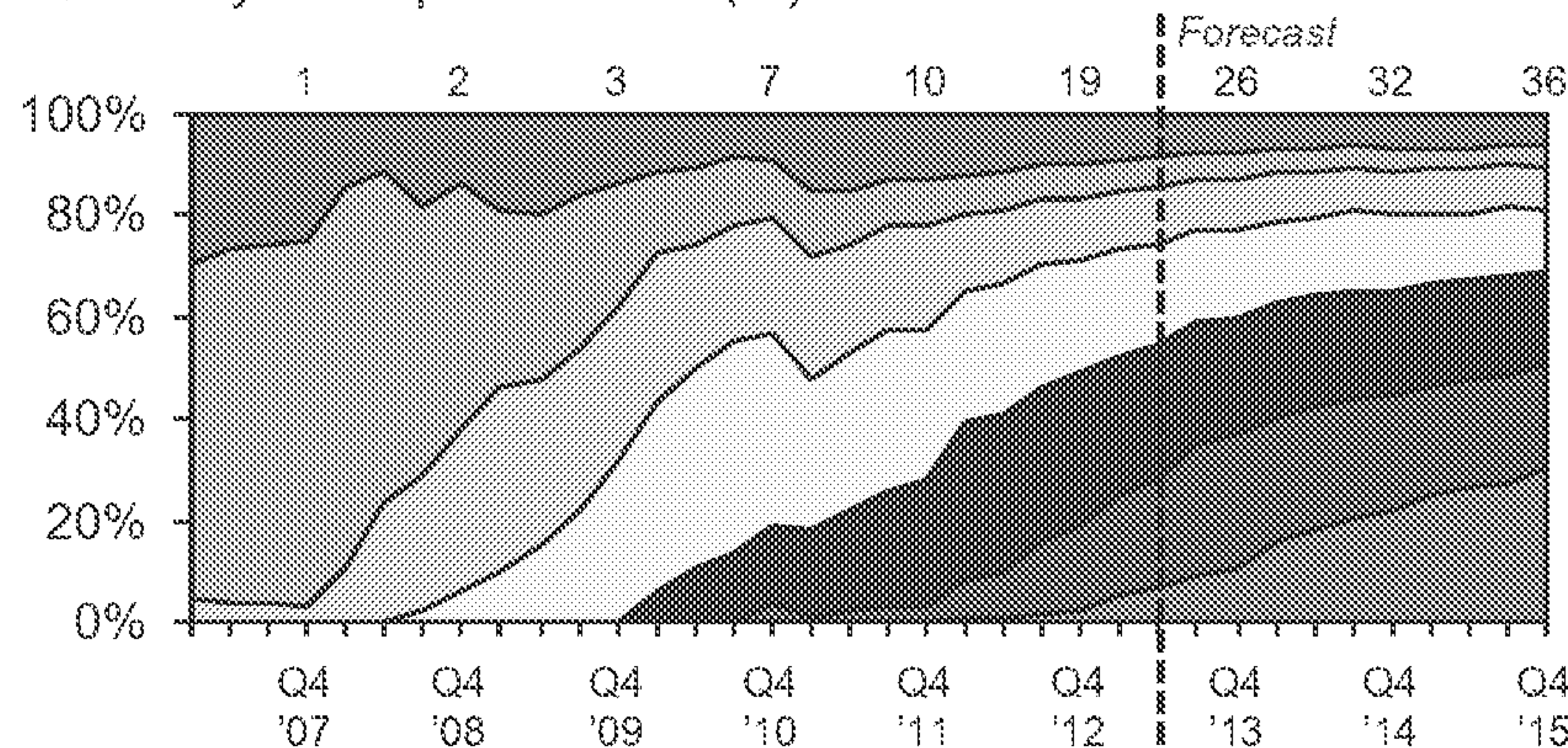


Share of >\$400 SP

Quarter	Share (%)
Q4 '07	46%
Q4 '08	32%
Q4 '09	28%
Q4 '10	22%
Q4 '11	25%
Q4 '12	19%
Q4 '13	14%
Q4 '14	11%
Q4 '15	9%

LATAM: Highly price sensitive markets; low tiers growing fast

Quarterly smartphone units (M)

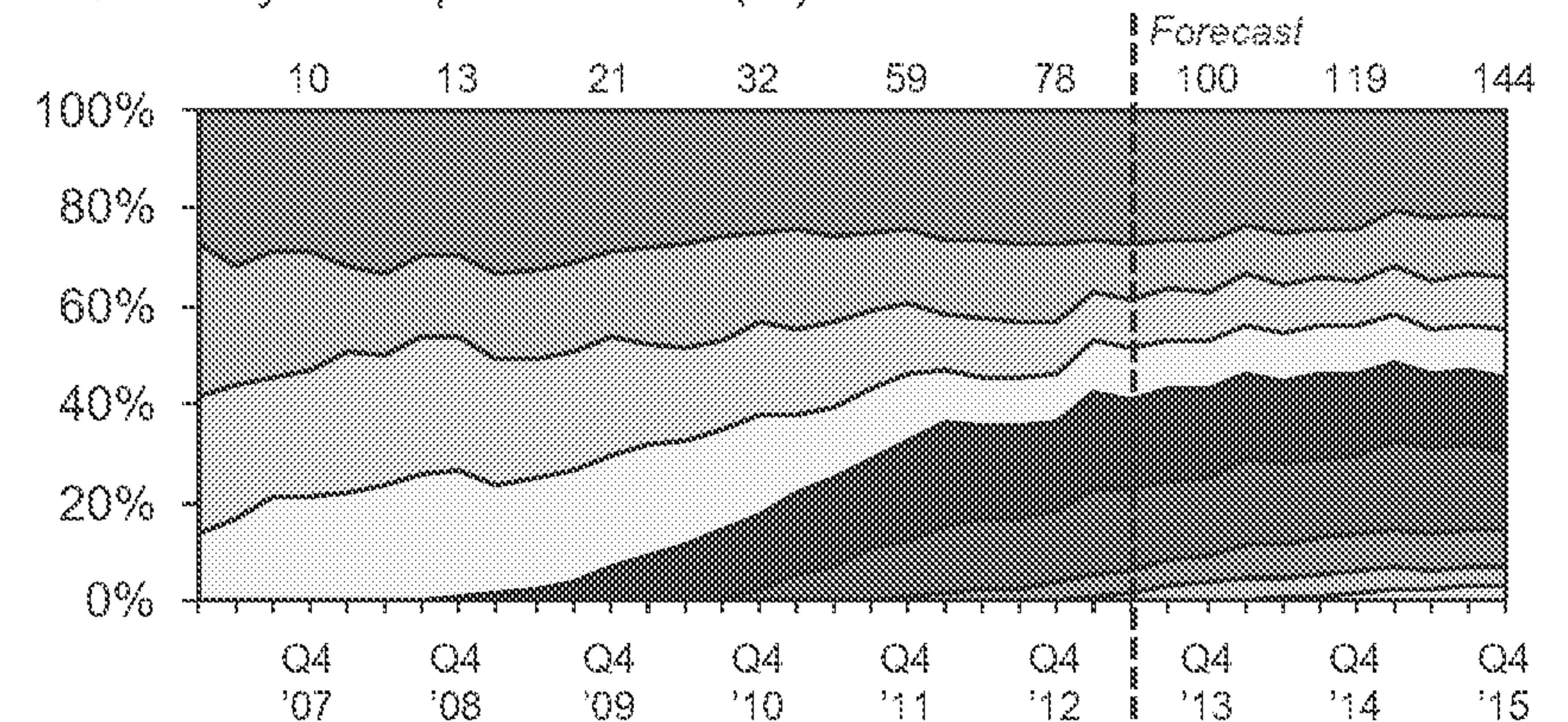


Share of >\$400 SP

Quarter	Share (%)
Q4 '07	25%
Q4 '08	14%
Q4 '09	13%
Q4 '10	9%
Q4 '11	13%
Q4 '12	10%
Q4 '13	8%
Q4 '14	7%
Q4 '15	6%

APAC: Higher tiers supported by JP/KR; Low tiers driving growth, supported by India and China

Quarterly smartphone units (M)



Share of >\$400 SP

Quarter	Share (%)
Q4 '07	29%
Q4 '08	30%
Q4 '09	29%
Q4 '10	25%
Q4 '11	24%
Q4 '12	27%
Q4 '13	26%
Q4 '14	24%
Q4 '15	22%

Android growth has been driven by mid and low tiers; iOS strong in high tier, but non-existent in lower tiers

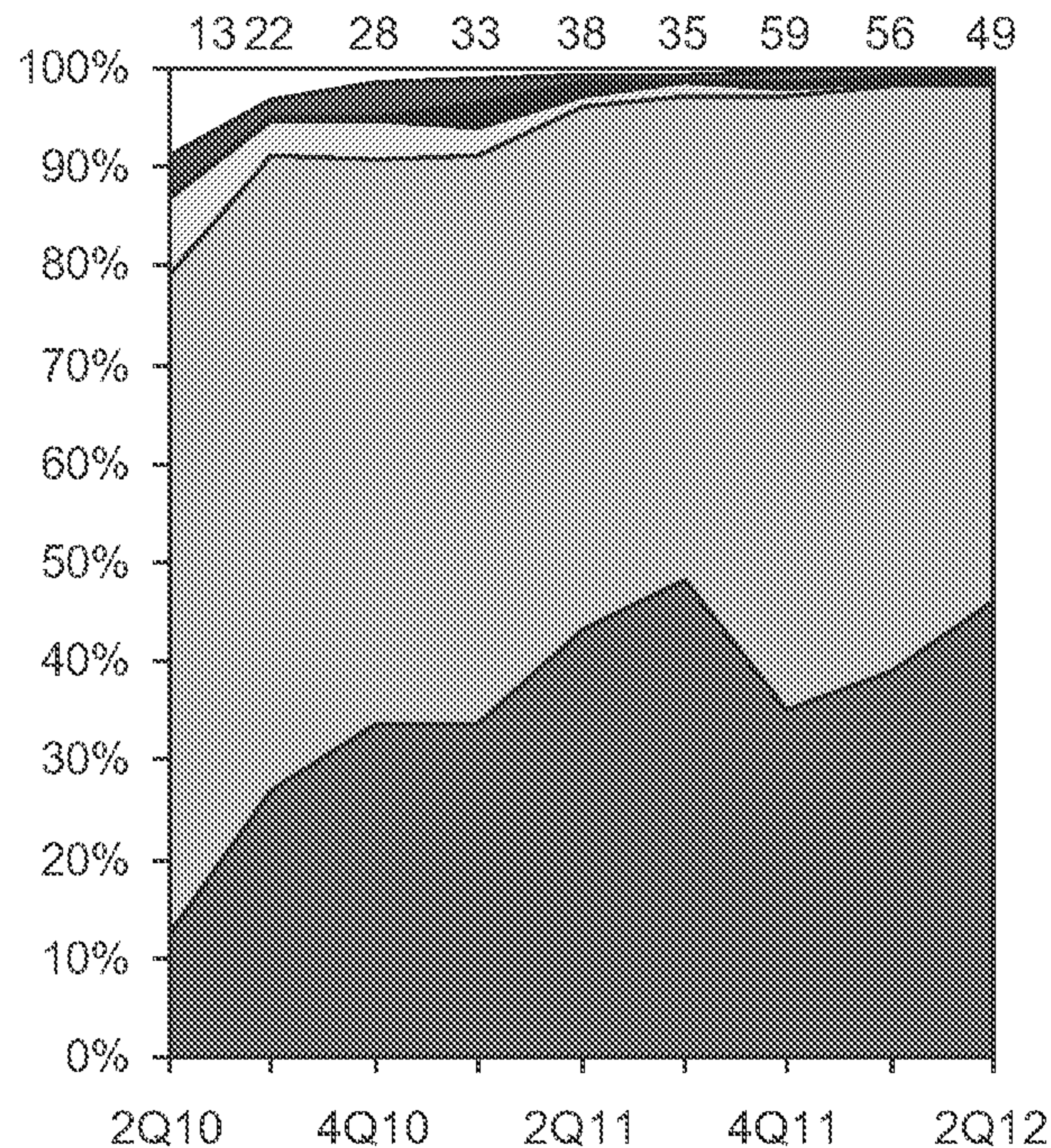
Other Windows bada RIM Symbian iOS Android

>\$400 ASP: Android and iOS comprise 98% of this tier

\$200-400 ASP: Android growing rapidly, RIM shrinks, Win edging back

<\$200 ASP: Very fast Android growth, others collapsing

Quarterly smartphone units (M)

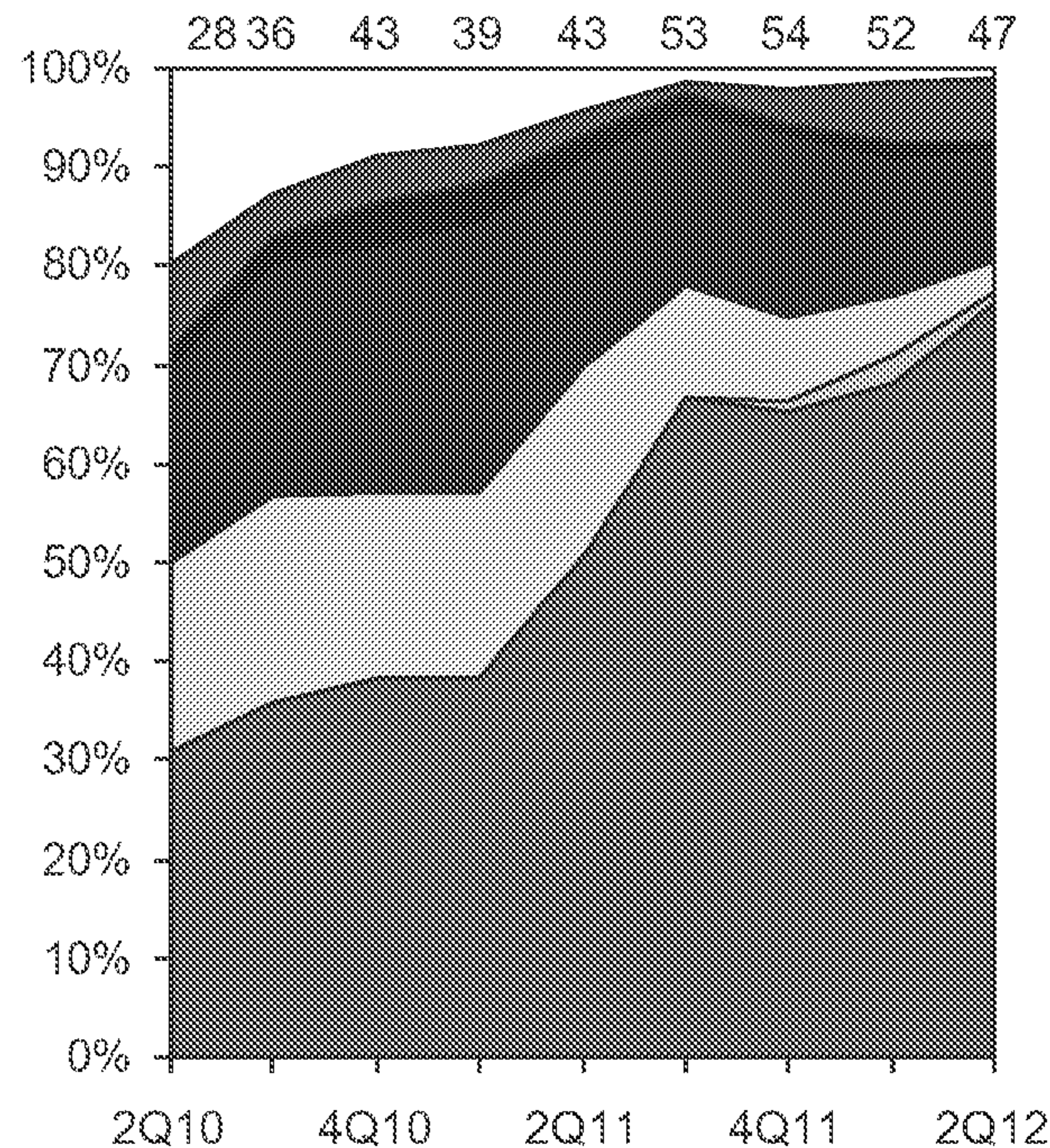


Q4'12 Share:

Android	46%
iOS	52%
RIM	2%
Windows	0%

Growth, Q2 '10 to Q2 '12: 386%

Quarterly smartphone units (M)

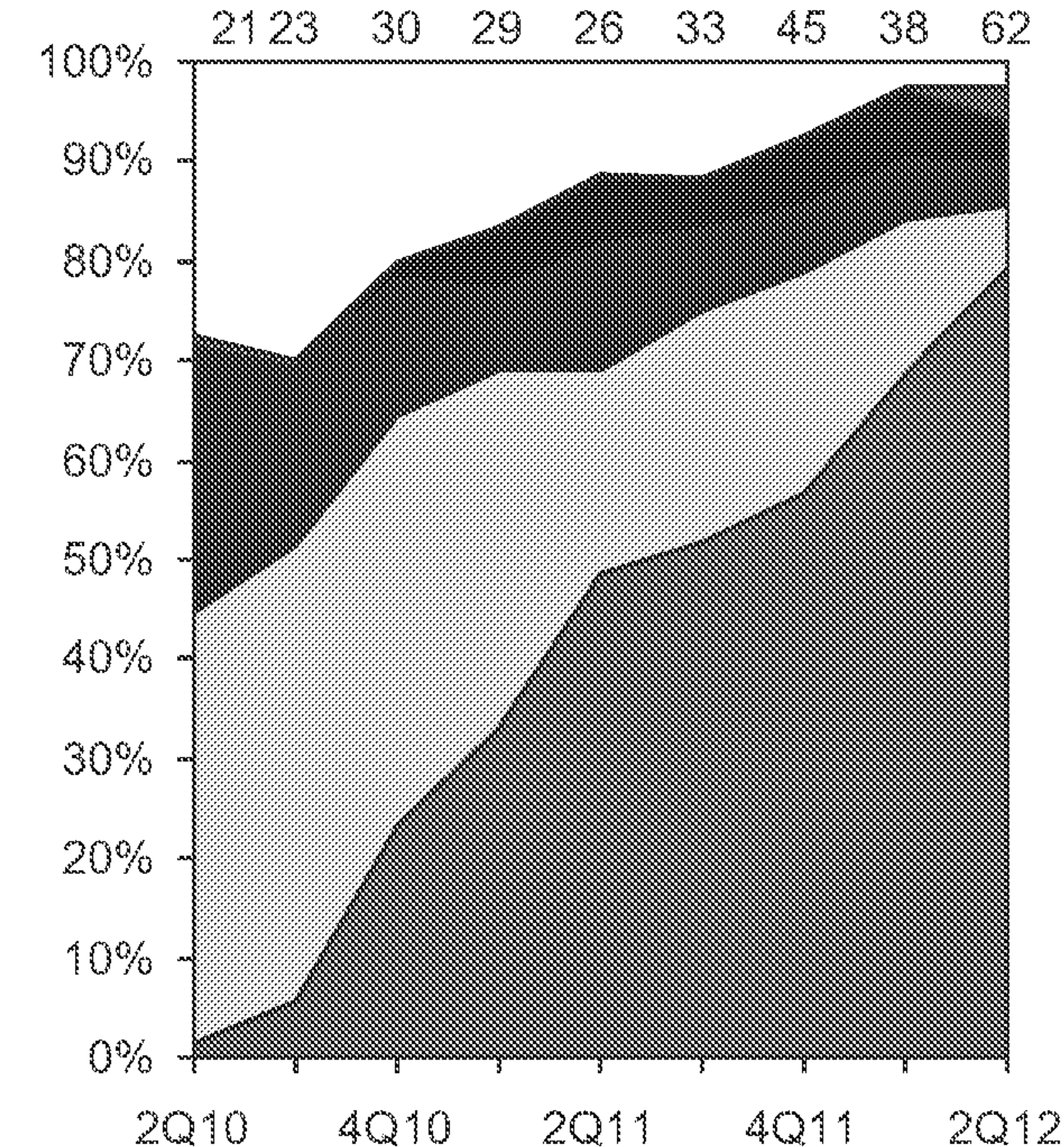


Q4'12 Share:

Android	76%
iOS	1%
RIM	11%
Windows	6%

Growth, Q2 '10 to Q2 '12: 167%

Quarterly smartphone units (M)



Q4'12 Share:

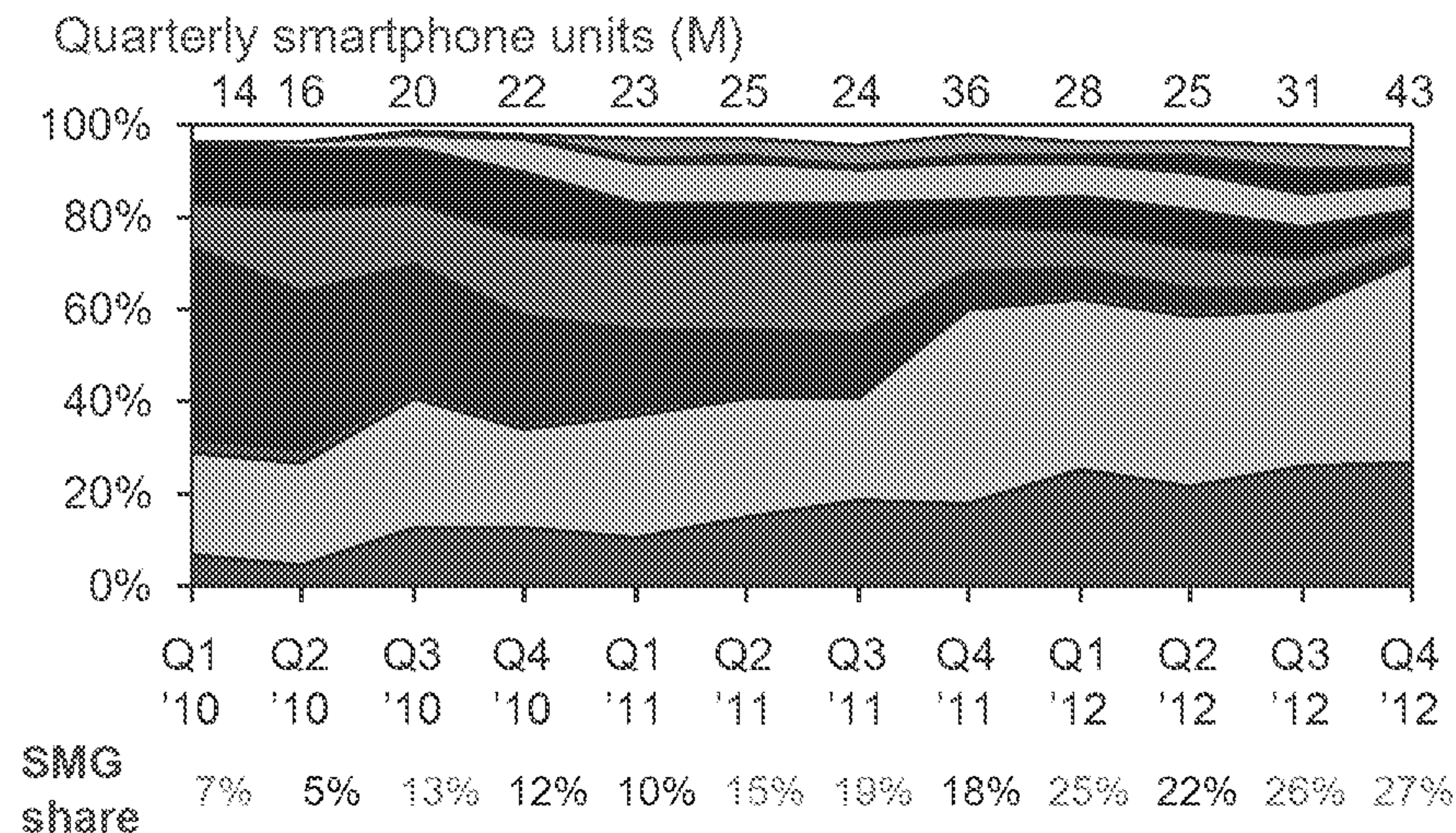
Android	79%
iOS	0%
RIM	4%
Windows	3%

Growth, Q2 '10 to Q2 '12: 290%

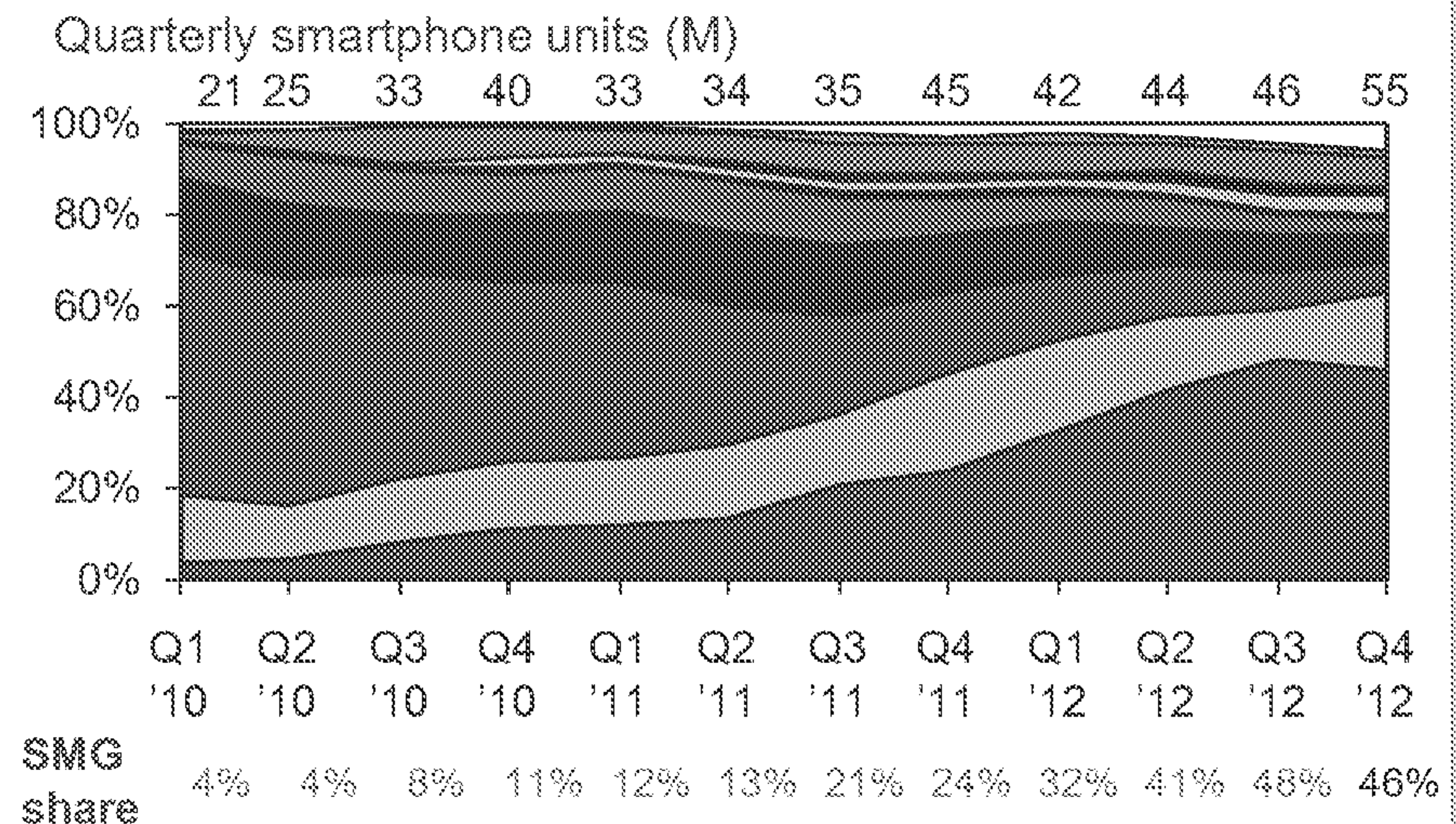
Samsung and Apple experiencing strong growth across all regions

Others Sony LG HTC Nokia Samsung
Huawei ZTE Motorola RIM Apple

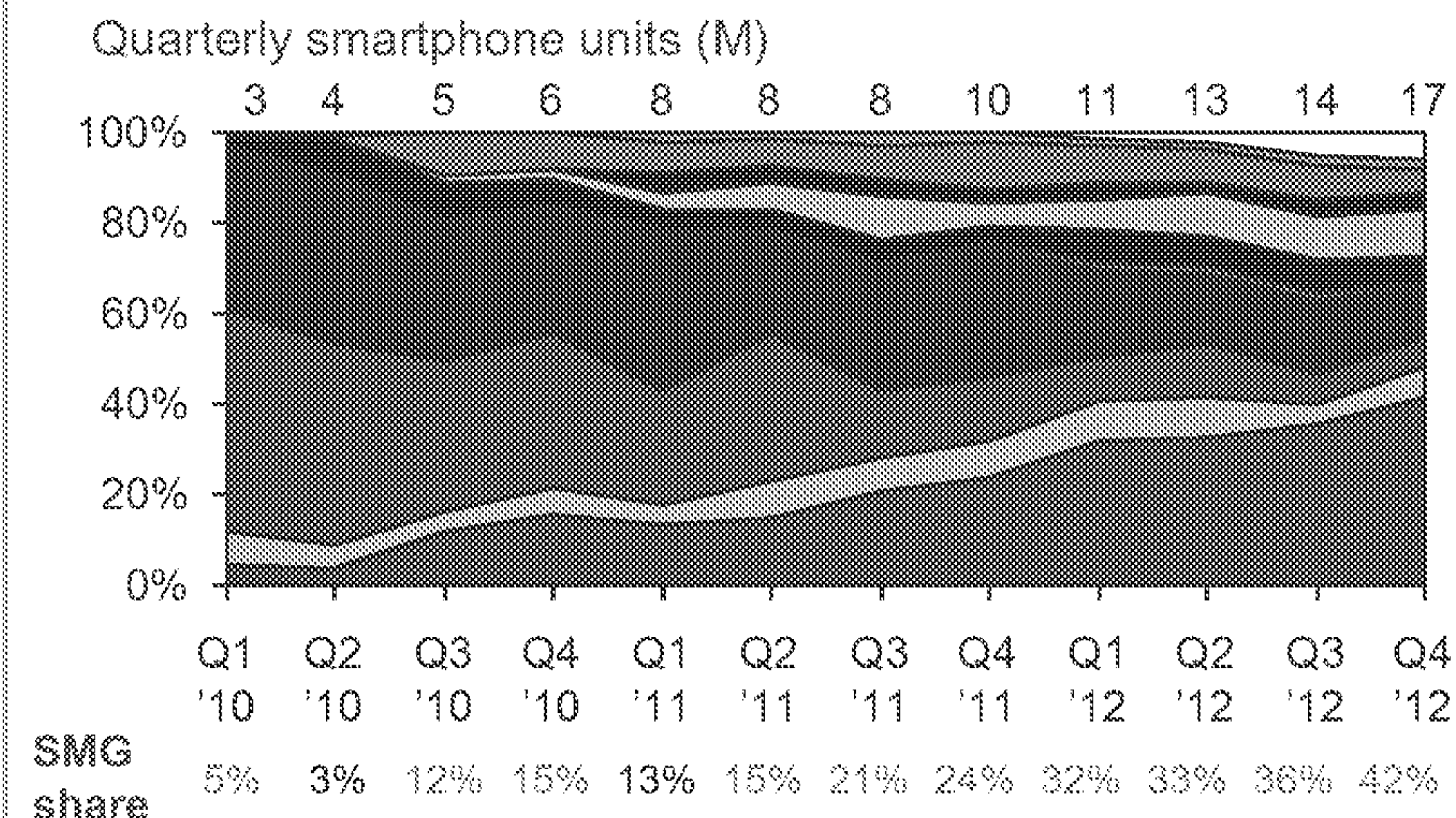
North America: Apple ahead, Samsung gaining



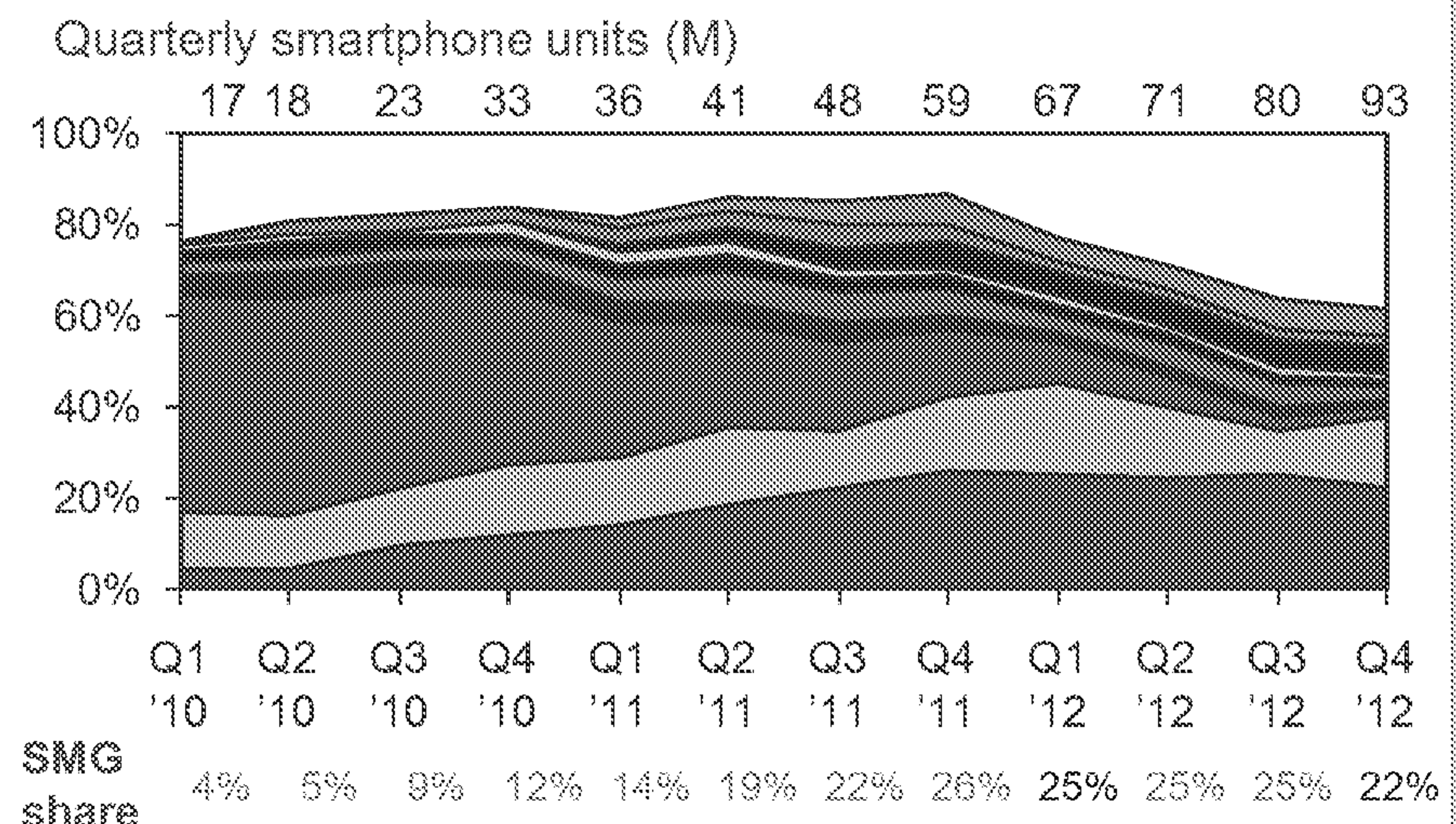
EMEA**: Samsung building share, Nokia diminishing



LATAM: Samsung gaining fast; Apple small and flat



APAC: Samsung, Apple, 'others' gaining share



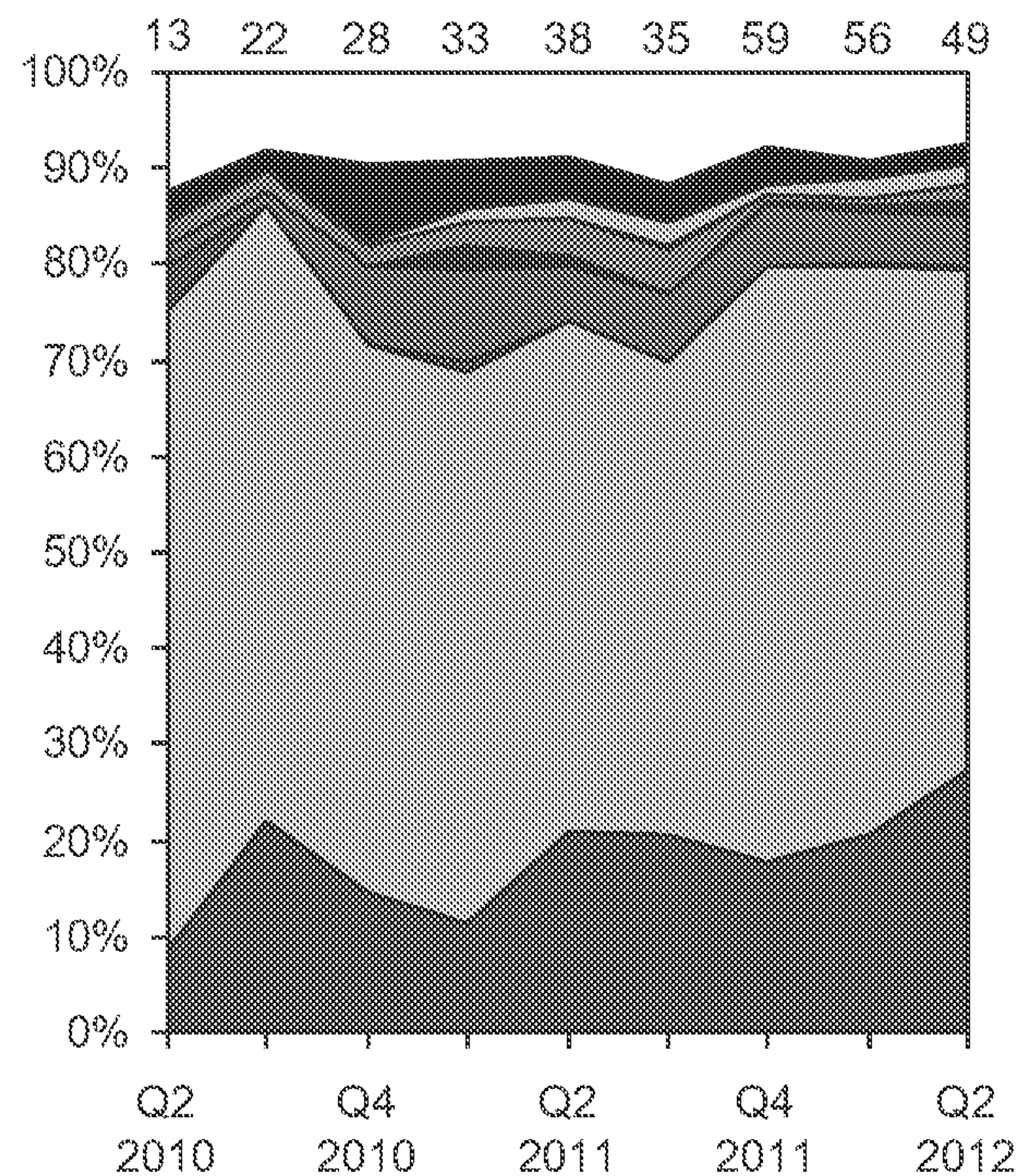
** EMEA includes Western Europe + Central & Eastern Europe + Middle East and Africa regions
Source: Gartner, Region and Country, 4Q12

Samsung has gained share in all price segments; Apple remains strong in high-end with >50% share

Others LG ZTE RIM Nokia Samsung
Motorola Huawei Sony HTC Apple

>\$400 ASP: Apple >50% this price segment

Quarterly smartphone units (M)



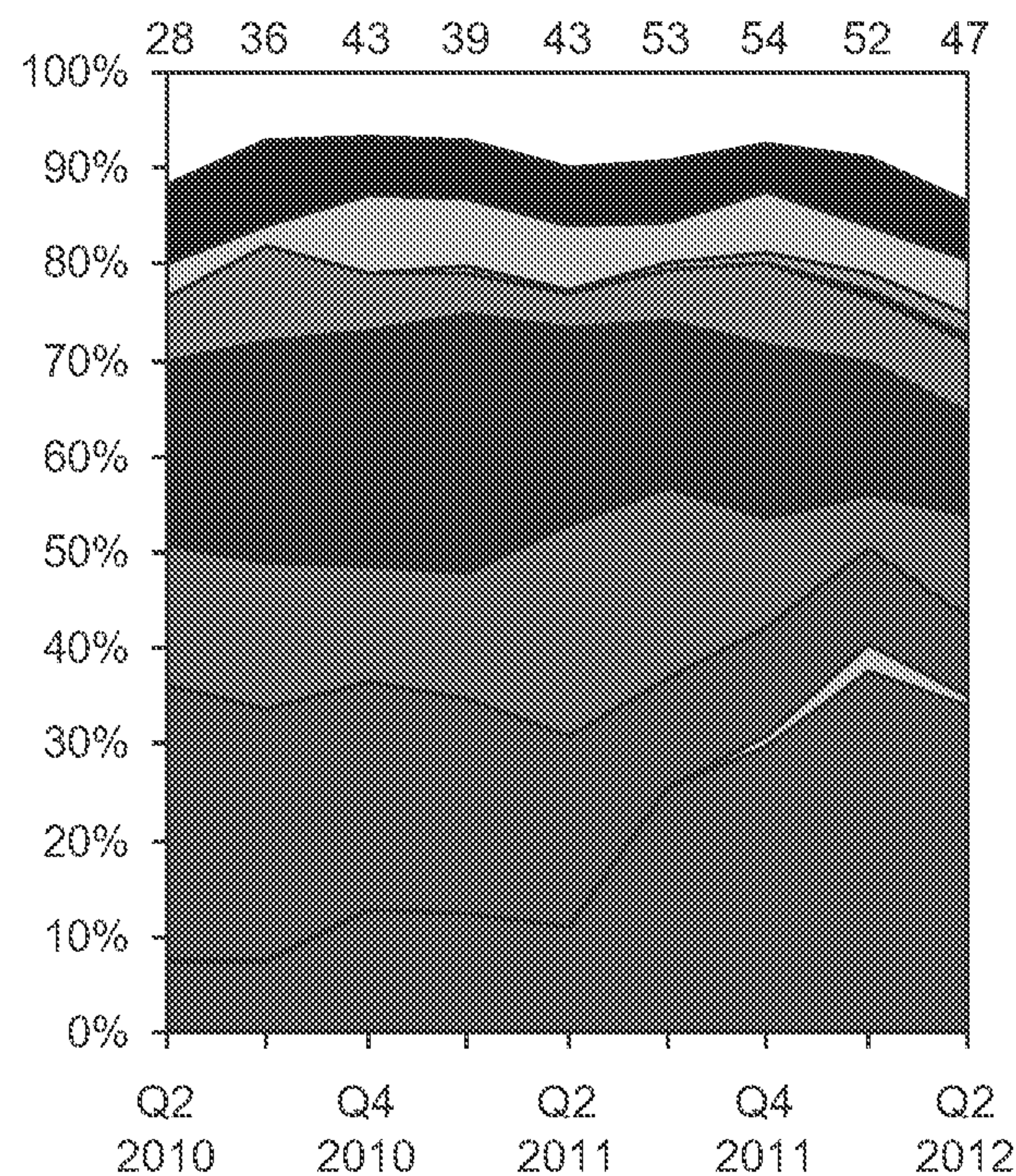
Q2 '12 Samsung share: 27%

Q2 '12 MMI share: 2.0%

Growth, Q2 '10 to Q2 '12: 286%

\$200-400 ASP: Samsung rapidly growing; Nokia, RIM declining

Quarterly smartphone units (M)



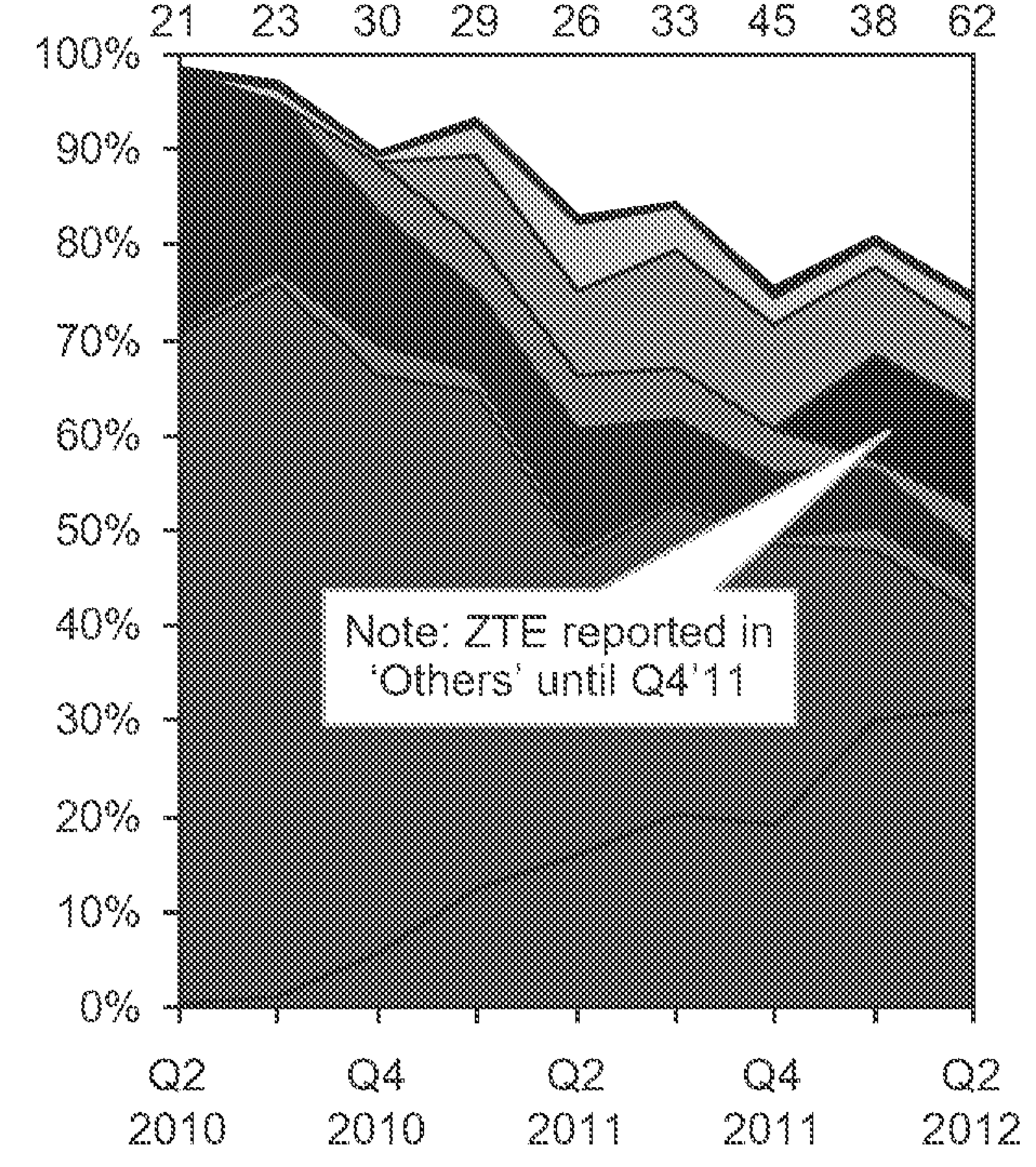
Q2 '12 Samsung share: 34%

Q2 '12 MMI share: 6.0%

Growth, Q2 '10 to Q2 '12: 67%

<\$200 ASP: Samsung, ZTE, and Huawei growing

Quarterly smartphone units (M)



Q2 '12 Samsung share: 31%

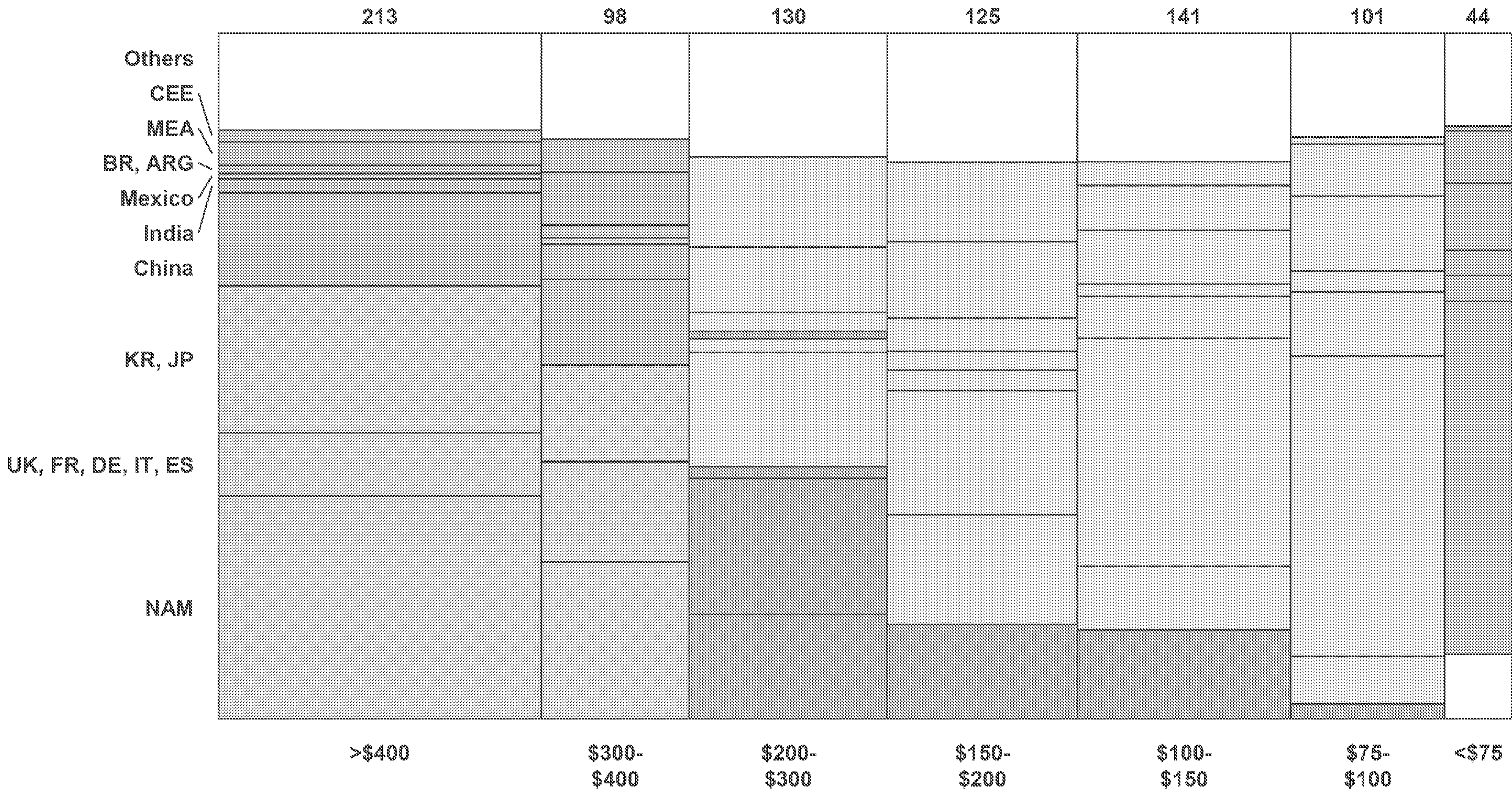
Q2 '12 MMI share: 0.7%

Growth, Q2 '10 to Q2 '12: 190%

No further growth expected in >\$400 price tiers in US and WE, but small growth in \$200-\$400 pre-paid; Majority of growth coming from lower tiers and China, India and LATAM

Volume 2013 (M Units)

- Segment 1
- Segment 2
- Segment 3
- Segment 4 (a)
- Segment 4 (b)

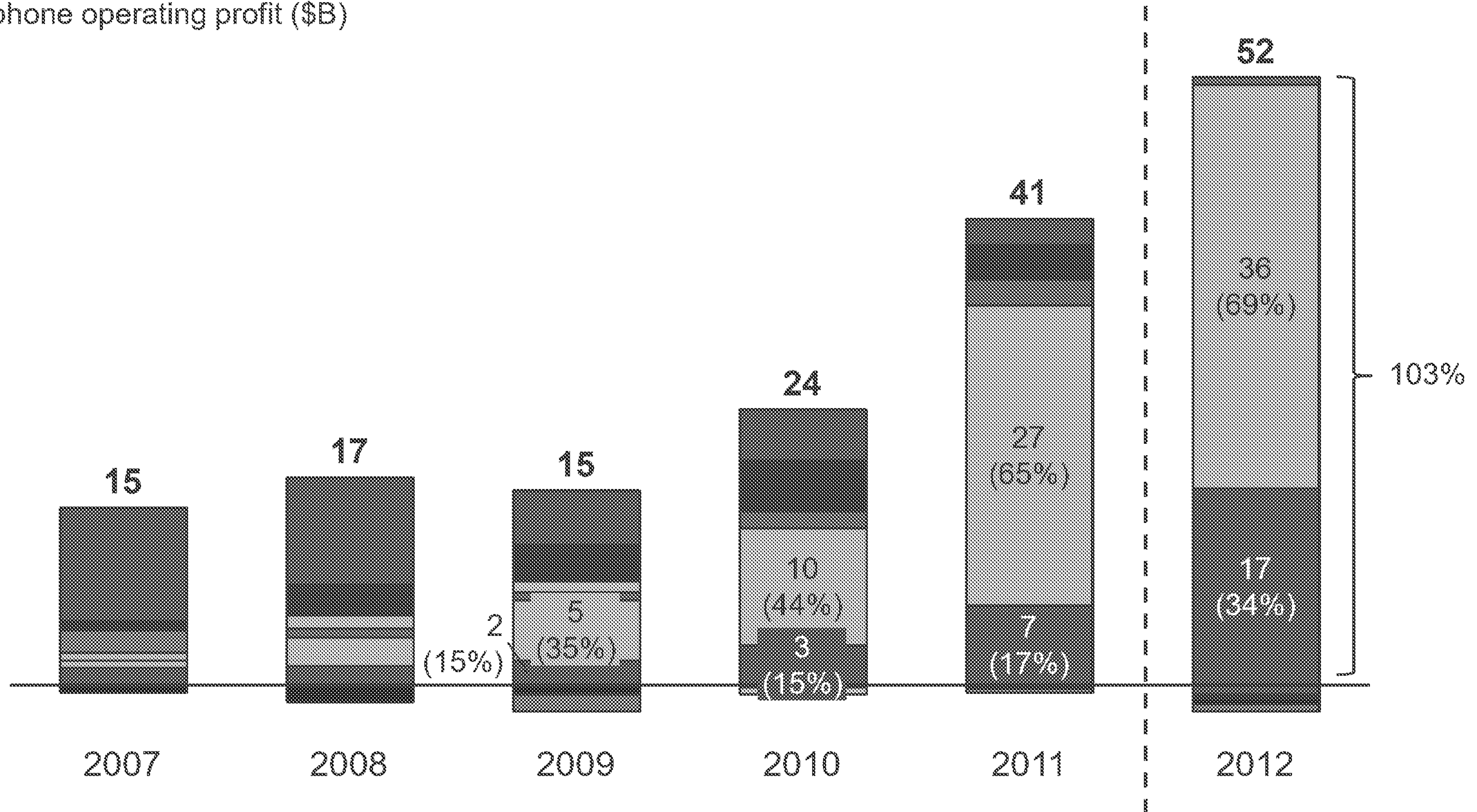


Samsung and Apple currently capture greater than 100% of all smartphone industry profits

Apple and Samsung together comprised 103% of smartphone operating profits in 2012

Nokia Motorola LG Apple
 RIM Sony HTC Samsung

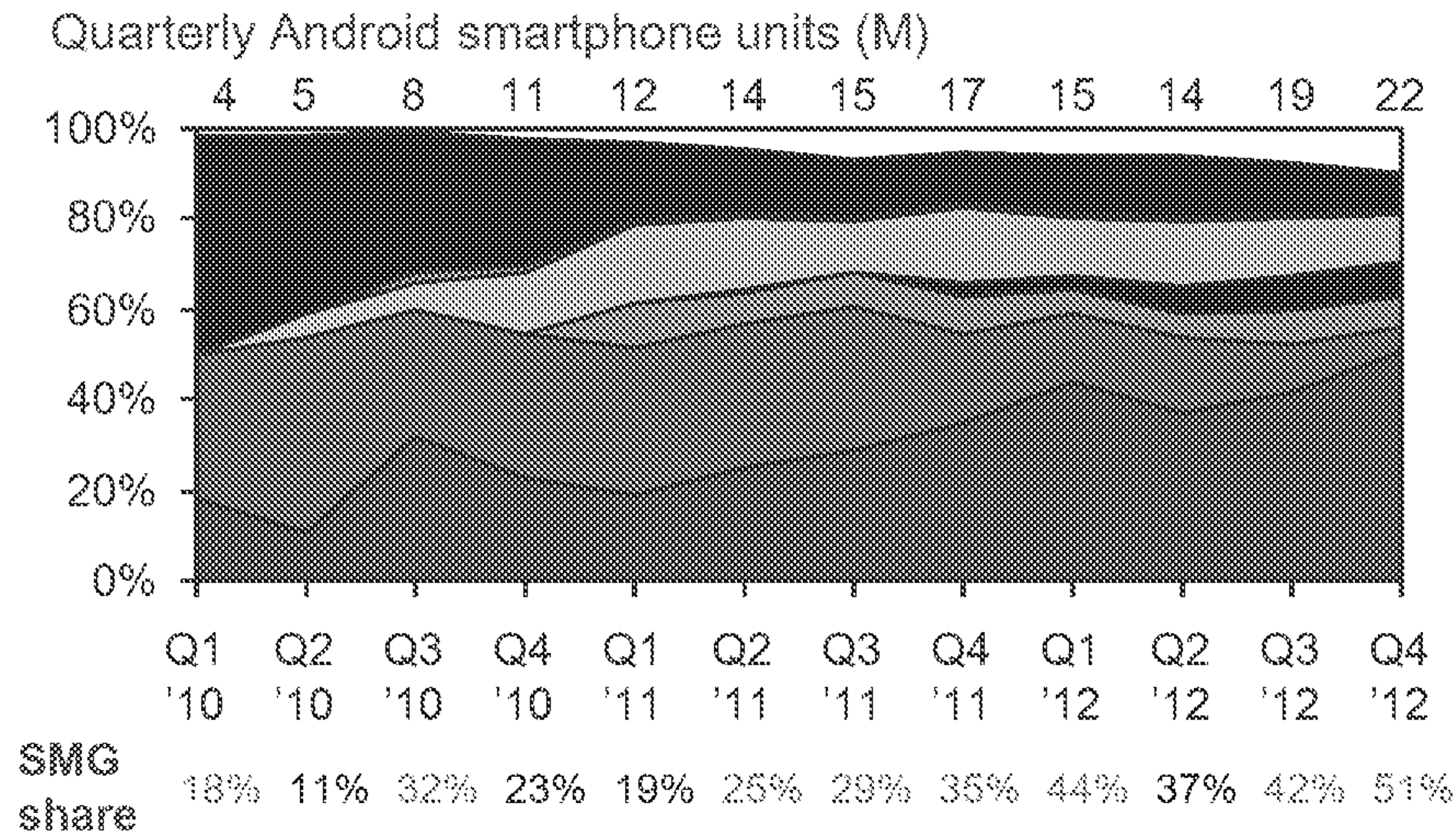
Smartphone operating profit (\$B)



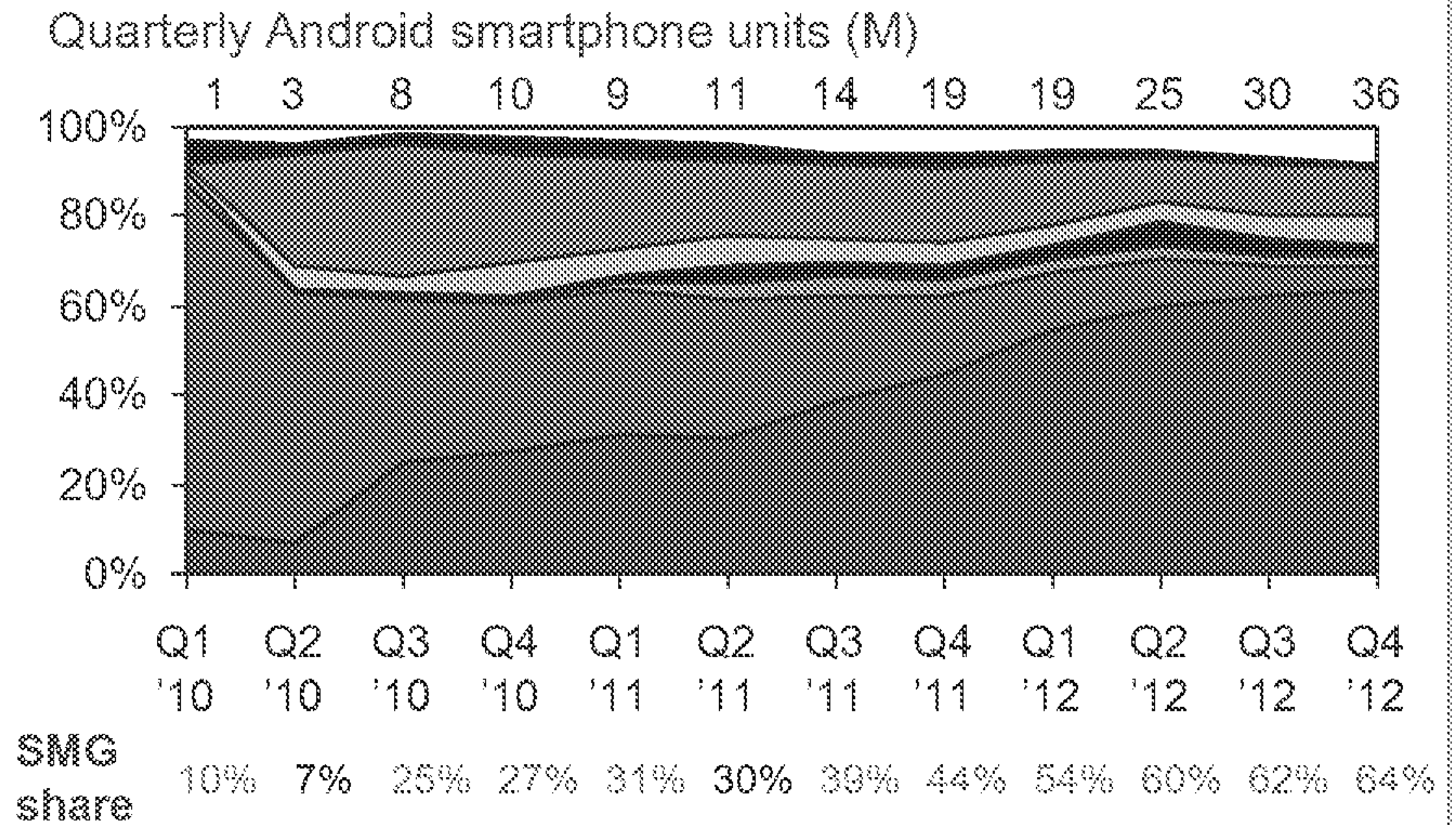
Android ecosystem is dominated by Samsung, with >50% share across all regions

Others Lenovo LG Huawei Samsung
Motorola Sony ZTE HTC

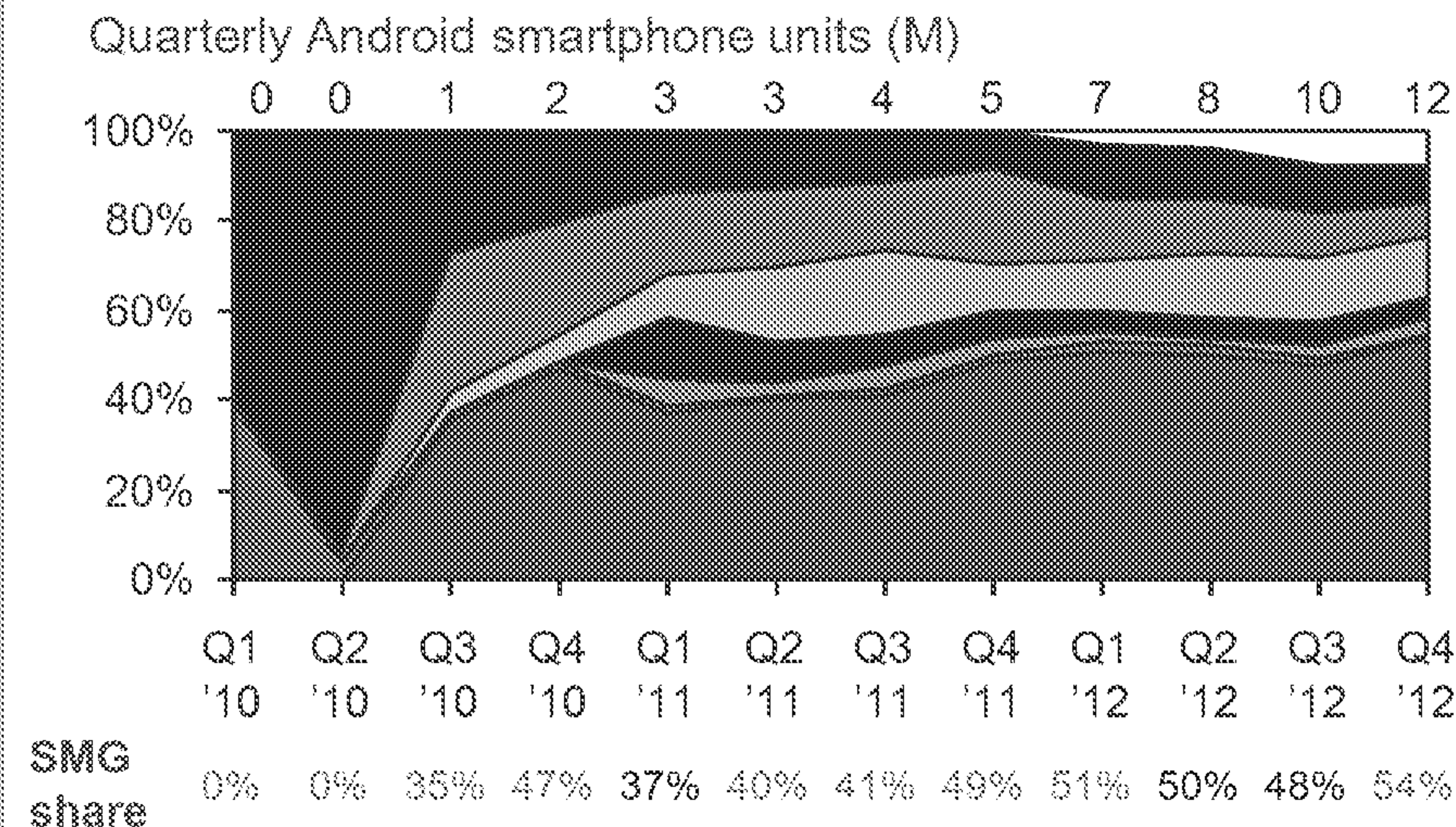
North America: Samsung building share; HTC, [REDACTED] down



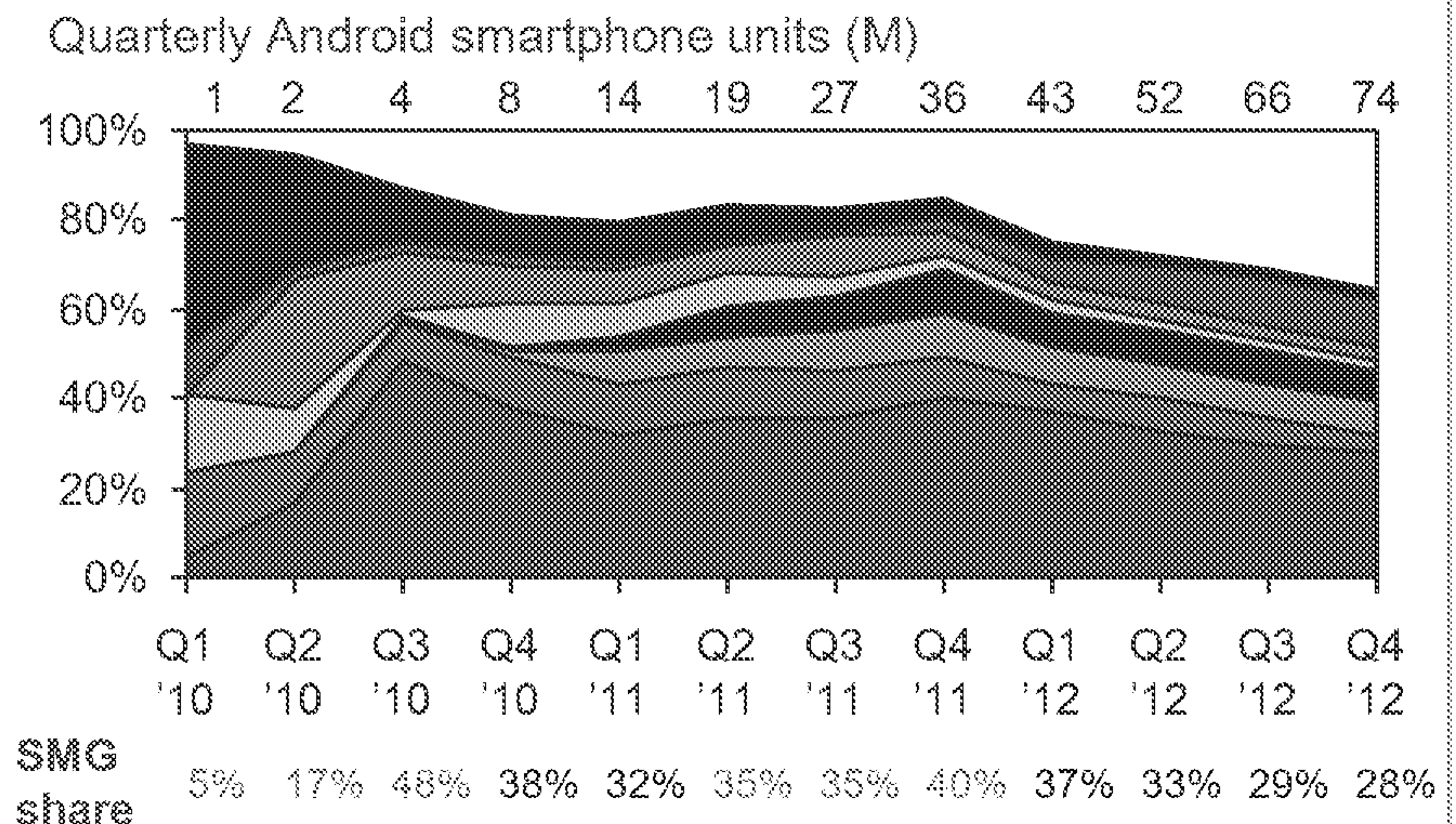
EMEA**: Samsung consolidating lead; HTC, Sony declining



LATAM: Samsung, LG gaining; [REDACTED] sharp decline



APAC: Others, mainly Chinese / Indian, players gaining share



** EMEA includes Western Europe + Central & Eastern Europe + Middle East and Africa regions
Source: Gartner Mobile Phones by Region and Country, 4Q12

Backup: What Samsung needs to replace Android with Tizen

Requirements	Status	Shortcoming	Comments
Create consumer brand and demand	Done. Nailed it by moving consumer focus to Samsung vs. Android/Google	None	Annual marketing expenditure unprecedented in any industry
Abstract the UI from Android	Done. Samsung moved to its own skin, visual look, iconography and naming scheme	(Opinion only) Samsung UI is a step down from Android due to its added complexity	In theory, they could implement their Android skin on Tizen and make the transition nearly seamless for end users.
Support Commercialization of hardware	Done. Use Android Linux underneath Tizen	None	Makes hardware ecosystem ready and available for Tizen
Application ecosystem	Done. Implement ACL	Quality	Co-opts application developers by given them a low barrier path to port applications
App Store & Content Services	Barely. Just launched a content store (description)	Breadth	Scarcity of content at the moment, but an interesting statement of direction.
Maps & Navigation	No progress. No great alternative to Google	Quality	Possible to do a deal with Bing or Navteq, or build their own, but with lower initial quality. More likely would attempt to strike a deal with Google.
Search	No great alternative to Google	Quality	Possible to do a deal with Bing, but with lower quality. More likely would attempt to strike a deal with Google.

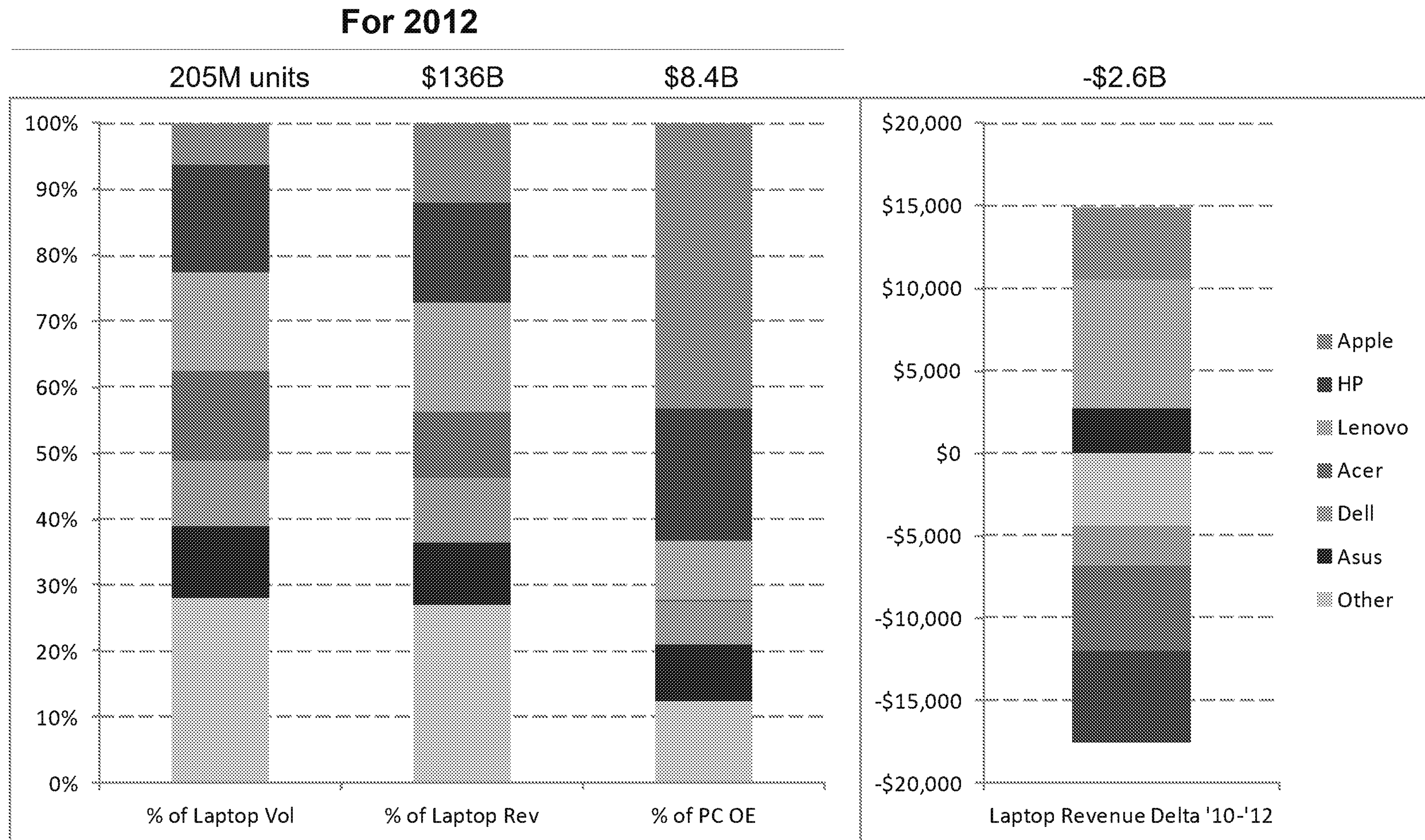
Strategic Options

Each Alternative Requires [REDACTED] to Place Key Bets and Prepare for Risks:

Alternative	Source of Differentiation	Key Risks
1. Fast integrator, select innovation	<ul style="list-style-type: none"> Selected themes : personalization, authentication, etc Become BIC faster integrator 	<ul style="list-style-type: none"> May not place right bets every cycle Chipset OEMs backward integrate experiences Not positioned to compete in low tiers, while industry ASP declining Lack of control of roadmap
2. Option 1 + scale player	<ul style="list-style-type: none"> Fast integrator + Offer good value Broad, global distribution Scale provides negotiating power w/ suppliers, carriers 	<ul style="list-style-type: none"> Limited scale if cost higher vs. players w/ in-house components Android partners at risk, if leveraging Google brand Large share at expense of low OE
3. Option 1 + scale + Component integration	<ul style="list-style-type: none"> Best position to sustain low prices Closer to techonology trends Broader, global distribution Negotiating power w/ suppliers, carriers 	<ul style="list-style-type: none"> Form factor evolution might reduce relevance of in-house components Delays in launches while growing scale and integrating compnents
4. Integrated user experience	<ul style="list-style-type: none"> Best positioned to deliver unique, WOW experiences Proprietary ecosystem Leverages IP to protect share Fast to market 	<ul style="list-style-type: none"> Time to market May not adjust to new trends/technologies in time (e.g RIM)
5. Exit hardware	<ul style="list-style-type: none"> Free OS Strength of developer ecosystem Installed Android base 	<ul style="list-style-type: none"> Lack of control Backward integration of experinces by chipset players Google brand dilutes if OEMs are not promoting it Fragmentation

PC Industry

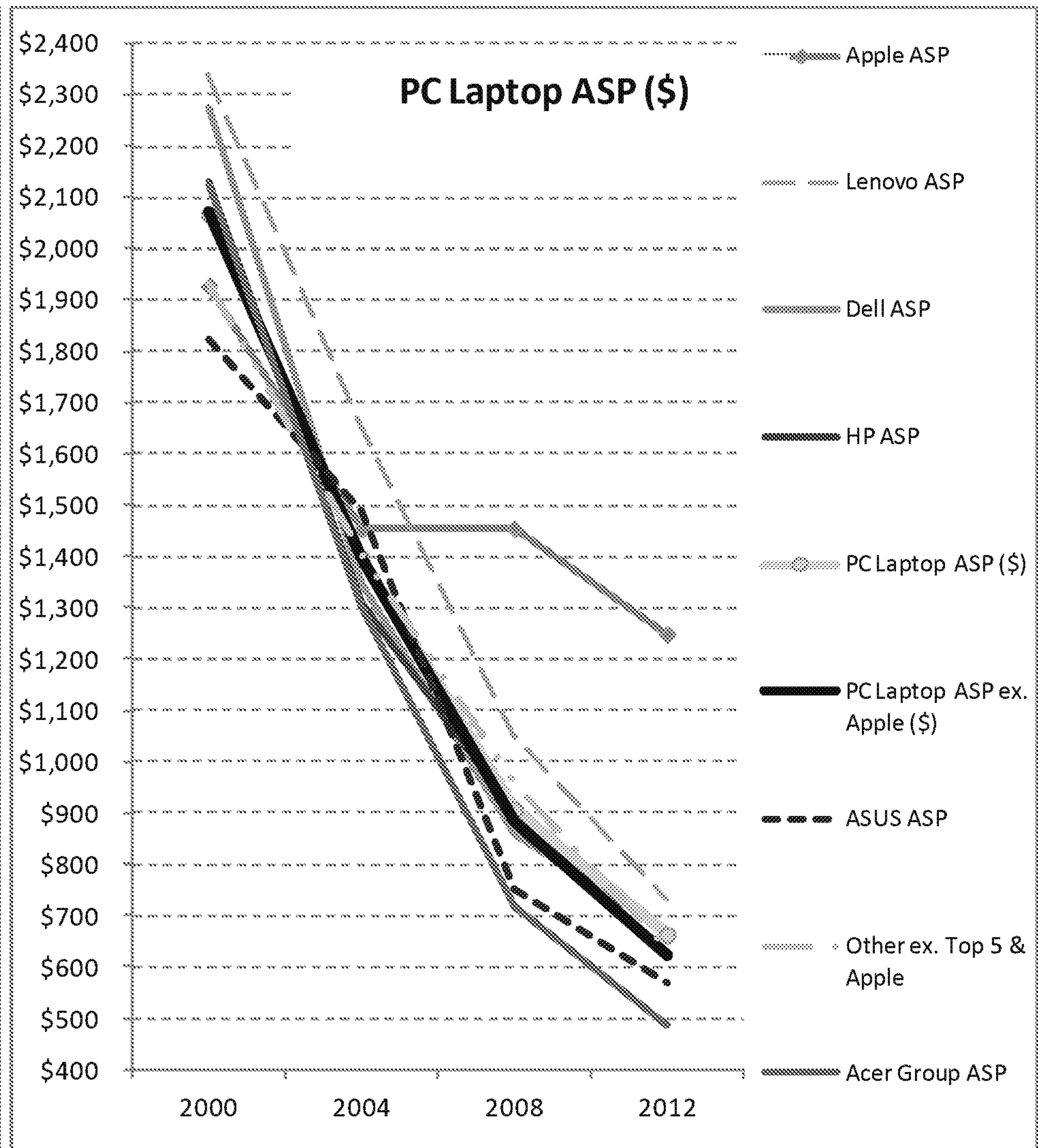
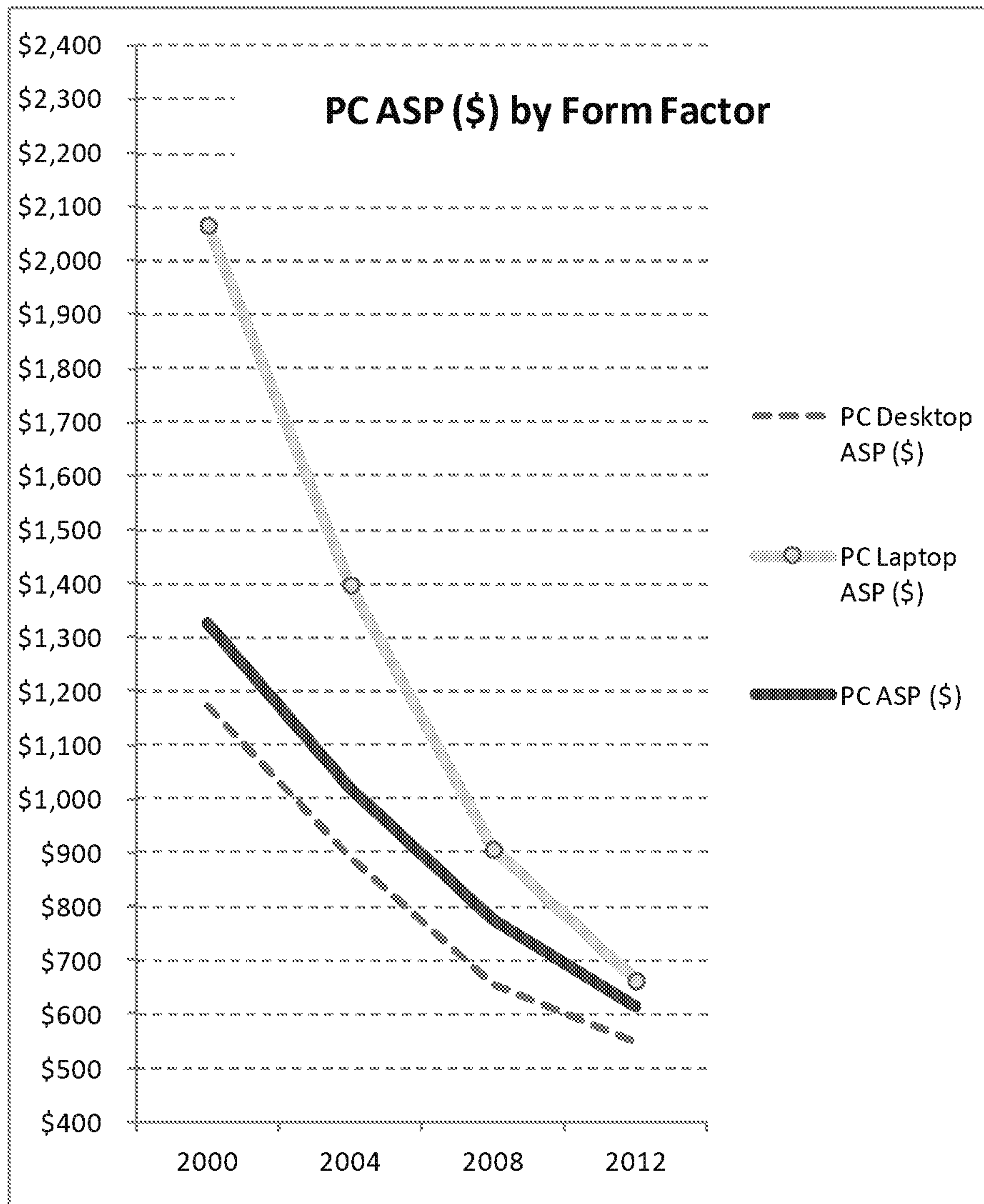
4. PC OEM Profitability: Apple has Low Volume and Revenue Share, but Drives Most Growth and Profits, Even in an Otherwise Commoditizing Market



PC OE is for total hardware (laptop + desktop)

- In 2012, Apple drove 6% of laptop units, 12% of laptop revenue, but earned 43% of PC industry OE

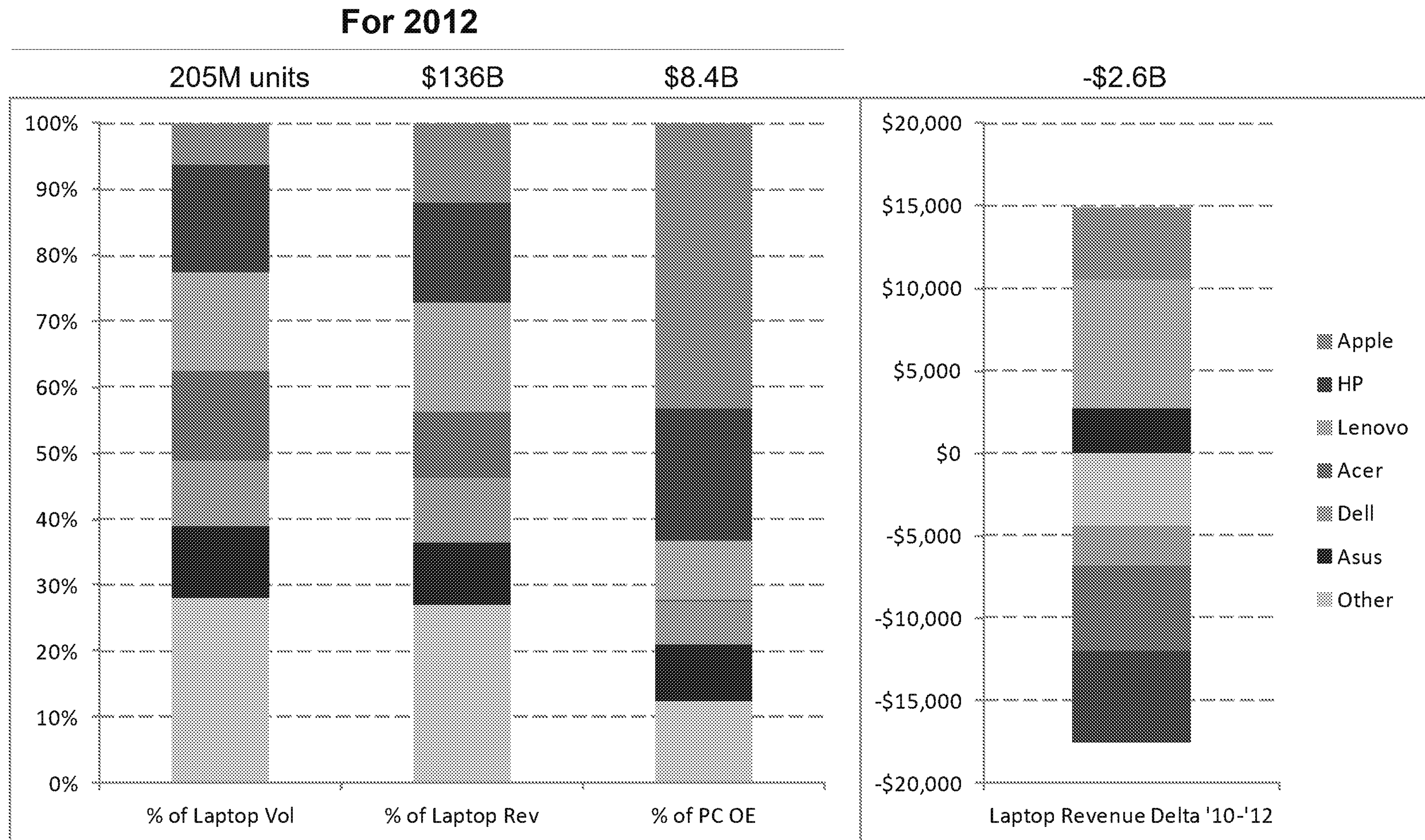
1. PC Price Evolution: Laptop Prices Fell 67% from 2000-2012 (Apple's Fell 33%)



- Laptop increased from 17% of units in 2000 to 58% in 2012 helping slow total PC ASP decline

- Laptop ASP decline CAGR of -9.0% from 2000 to 2012, Apple had -3% CAGR

4. PC OEM Profitability: Apple has Low Volume and Revenue Share, but Drives Most Growth and Profits, Even in an Otherwise Commoditizing Market

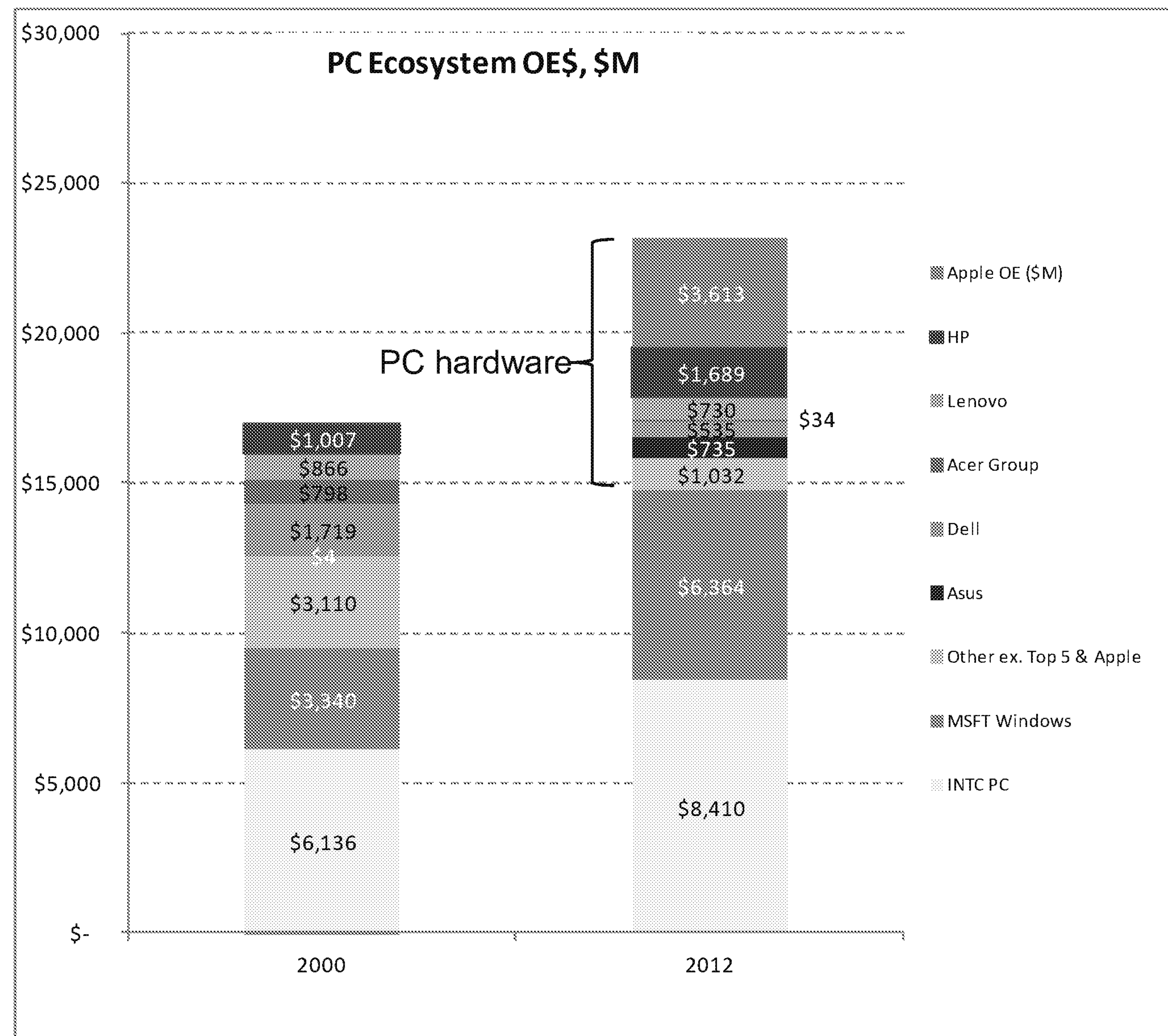


PC OE is for total hardware (laptop + desktop)

- In 2012, Apple drove 6% of laptop units, 12% of laptop revenue, but earned 43% of PC industry OE

3: PC Ecosystem Profitability: Intel, Microsoft and Apple Driving Most Profitability

- PC hardware takes 36% of ecosystem profit
 - Then Apple takes approx. half of this PC hardware profit
- Intel and Microsoft take 64% of ecosystem profit



*PC ecosystem defined as PC hardware + Intel PC + Microsoft Windows

Source: Gartner, company reports, Goldman Sachs
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Winning in these segments will likely require different strategies

Segment	Definition recap	What does it take to succeed
1. Premium, subsidized, carrier driven markets	<ul style="list-style-type: none"> Premium, subsidized, developed markets Majority volume through tier-1 carriers, on 1-2 year contracts Apple and Samsung dominant Market opportunity of 187m units, \$36 bn profit potential in 2013 Flat growth in units, and 6% p.a. profit erosion expected 	<ul style="list-style-type: none"> Unique, “wow” products and user experiences through: <ul style="list-style-type: none"> Close HW+SW+Services integration Select innovations
2. Premium, unsubsidized, retail driven markets	<ul style="list-style-type: none"> Premium, but unsubsidized, emerging markets Relatively higher price sensitivity among users (vs. segment 1) because of no device subsidies Majority volume through distributors and retailers Apple and Samsung dominant Market opportunity of 78m units, \$14 bn profit potential Volume and Profit(\$s) expected to grow at ~20% p.a. 	<ul style="list-style-type: none"> Unique, “wow” products and user experiences Disruptive models to lower upfront device acquisition costs (Financing, e.g. Googlecard) and total cost of ownership (Access, e.g. MVNO model) Global scale in distribution
3. Mid-low tier, largely pre-paid or tier-2 post-paid, carrier driven markets	<ul style="list-style-type: none"> Mid-low price tiers (from \$75-\$300) Price sensitive, largely pre-paid or low tariff post-paid consumers Majority volume through tier-2 carriers Apple weak – caters segment through previous gen iPhones; Samsung leads Market opportunity of 87m units, \$5 bn profit potential Volume and Profit (\$s) expected to grow at 10% and 6% p.a. resp. 	<ul style="list-style-type: none"> Right product in the sweet spot price range (\$100-200) Disruptive models to lower total cost of ownership (e.g. MVNO model, Freezone) and lower upfront device acquisition costs Scale in cost
4. Mid-low tier, price, value, and retail driven markets	<ul style="list-style-type: none"> Mid-low price tiers (from \$75-\$300) Highly price sensitive, pre-paid consumers, with very low (~\$3-10) data ARPUs Majority volume through distributors and retailers Samsung, and other local OEMs dominate Market opportunity of 356m units, \$11 bn profit potential Volume and Profit (\$s) to grow at 35% and 10% resp 	<ul style="list-style-type: none"> Right product at very low cost Global scale in distribution Vertical component integration and low cost structure to sustain low prices Disruptive models to lower total cost of ownership Subsidizing HW through sustainable, alternate revenue streams (e.g. ad based phones, etc)

Camera Industry

Lessons from the Camera Industry

ASP evolution

- ASPs show declining trend across all segments, even high-end DSLR cameras
- During transition from analog to digital demand for digital ramped up in spite of higher ASPs (usability, TCO)

Market Share

- Interchangeable lens (DSLRs): High-end models
 - Canon leads with 59% share: Strongest IP portfolio; lenses lock and/or upgrade users to higher tiers in time; very strong brand; 100% in-house manufacturing.
 - Nikon #2 leader (33% share): Fast launch cycles, strong marketing/distribution with CE stores; strongest brand (highest ranked satisfaction); lenses and accessories lock and/or upgrade users to high tiers
- Compact Camera: Low end, more fragmented vs. DSLRs
 - Canon and Nikon are strong leaders (15% and 13% share): Both re-use components initially designed for high-end, leverage halo from DSLRs, lenses and accessories enable to lock and upgrade users to higher tiers in time
- Mirrorless camera:
 - Growing category developed by Panasonic in '08 positioned in mid tiers
 - Led by Sony, Olympus, Panasonic and Nikon. Nikon quickly catching up (18% share) given quick follower strengths vs. Canon who has barely captured share in this growing category

Innovation

- Innovation centered around new categories: mirrorless cameras, sport cameras, 3D cameras
- Panasonic (not a market leader) created mirrorless cameras which are better suited for emerging markets

Profitability

- 20% in-house production likely enabling Nikon to control fixed costs and react to lower volumes vs. Canon

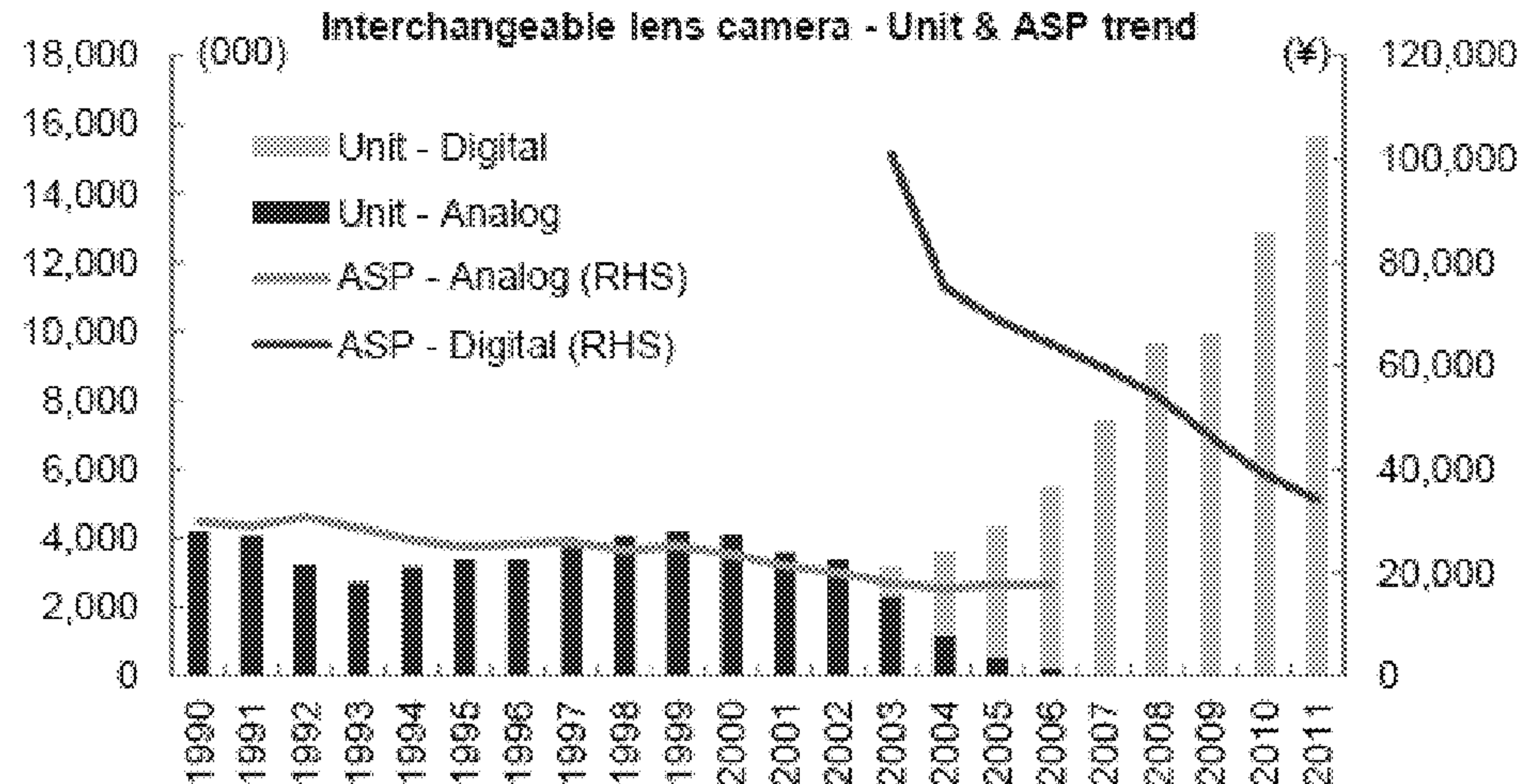
Key Takeaways

1. Canon – leads in high tier has a strong IP portfolio and 100% production in house
2. Nikon – leads in high tier: strong brand, Some in-house component integration, fast to market

1. Price Evolution: Sharp Decline in prices for both camera segments; Demand for Compact Cameras Declining

Interchangeable Lens: Camera Global Units and Price Trend

Source: Credit Suisse



Transition from Analog to Digital

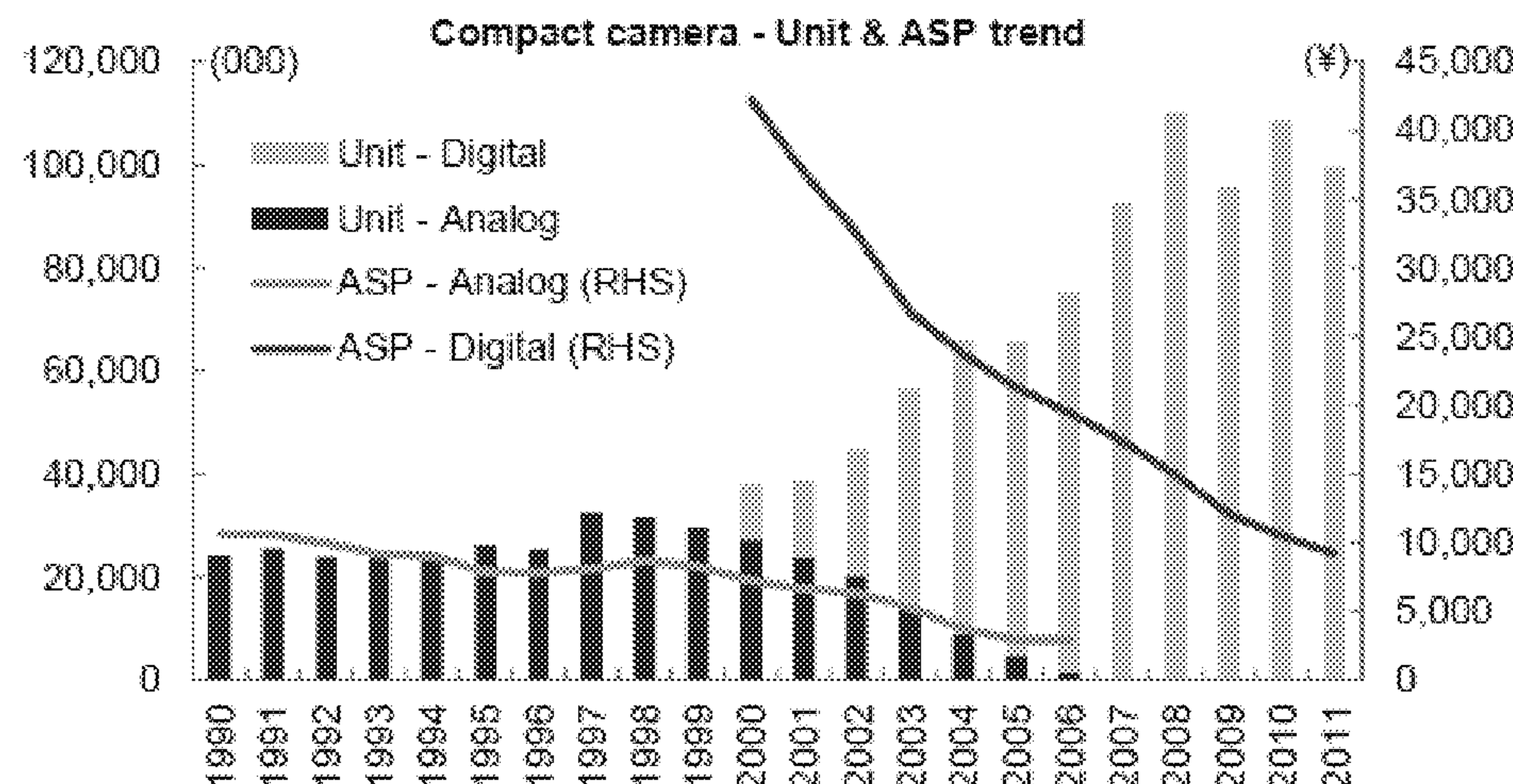
- Despite higher ASP of digital camera's vs. analog, demand for digital ramped up driven by:
 - Improved usability (easy share, save etc)
 - Lower TCO (e.g., no cost of processing)

Interchangeable Lens Cameras

- ASP declined at ~13% CAGR between 2003-11
- Demand continues to increase as prices decline and casual photographers move up to advanced cameras

Compact Camera: Global Units and Price Trend

Source: Credit Suisse



Compact Digital Camera

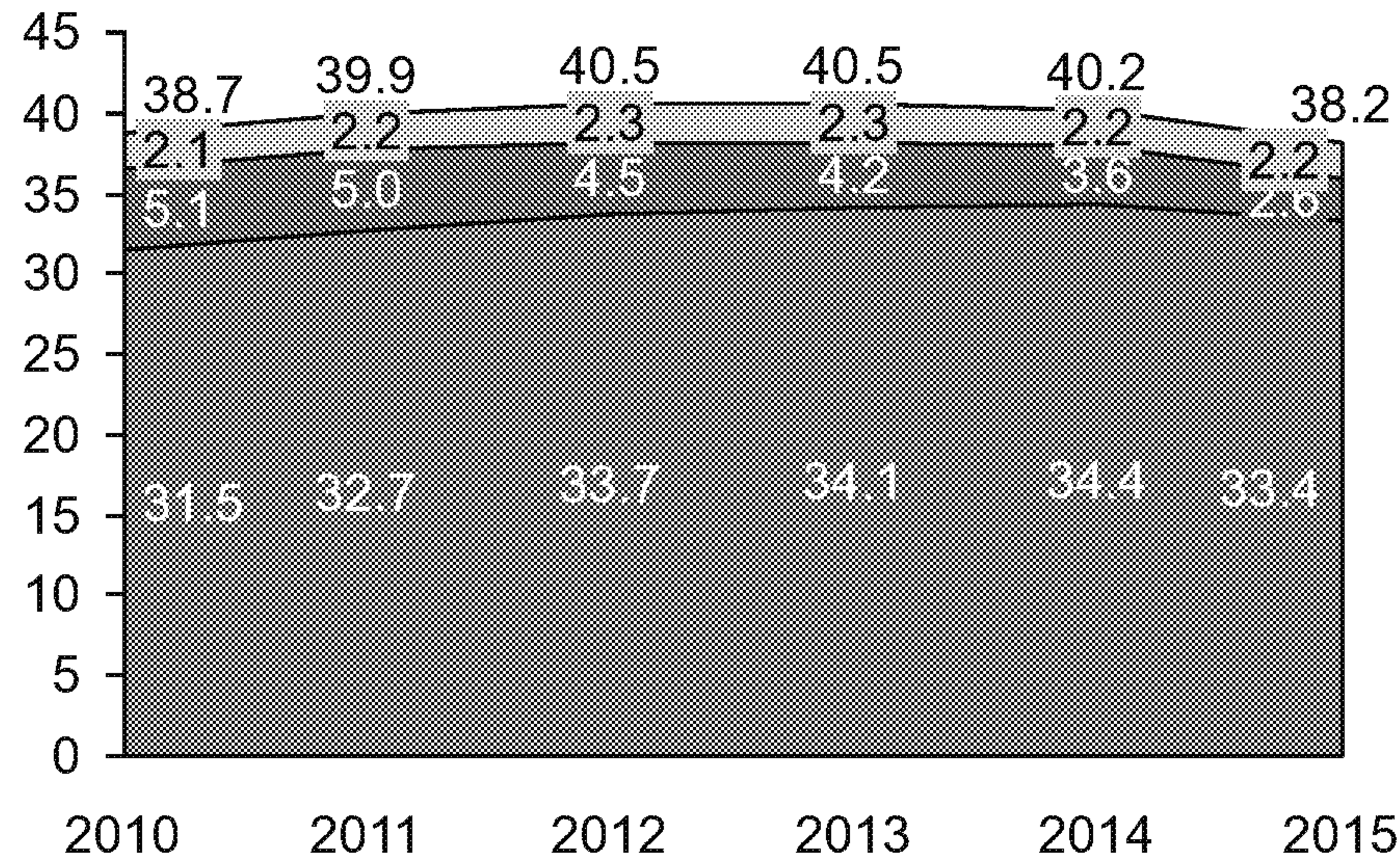
- ASP declined at a ~13% CAGR 2003-11
- Demand declined after 2008 despite lower prices (cannibalized by smartphone cameras)

1. In the US Camera Volume is Driven Mostly by Point and Shoot with >12MP, ASP declining trend expected to continue in future years

Digital Cameras Sold in USA

Units Sold (K)

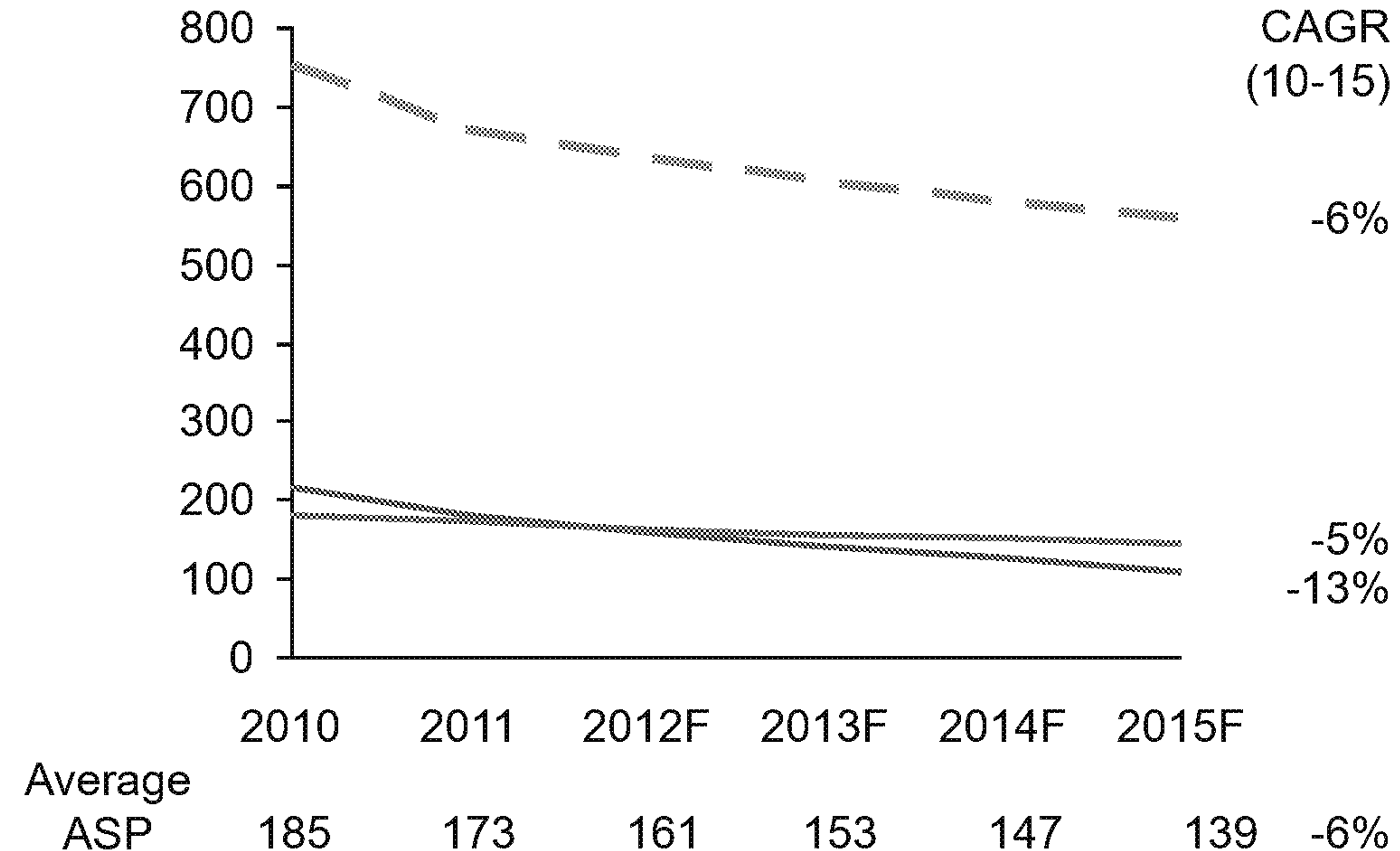
Digital SLR
 Point and Shoot 12MP+
 Point and Shoot <12 MP



Average ASP

\$

Digital SLR
 Point and Shoot 12 MP+
 Point and Shoot <12 MP

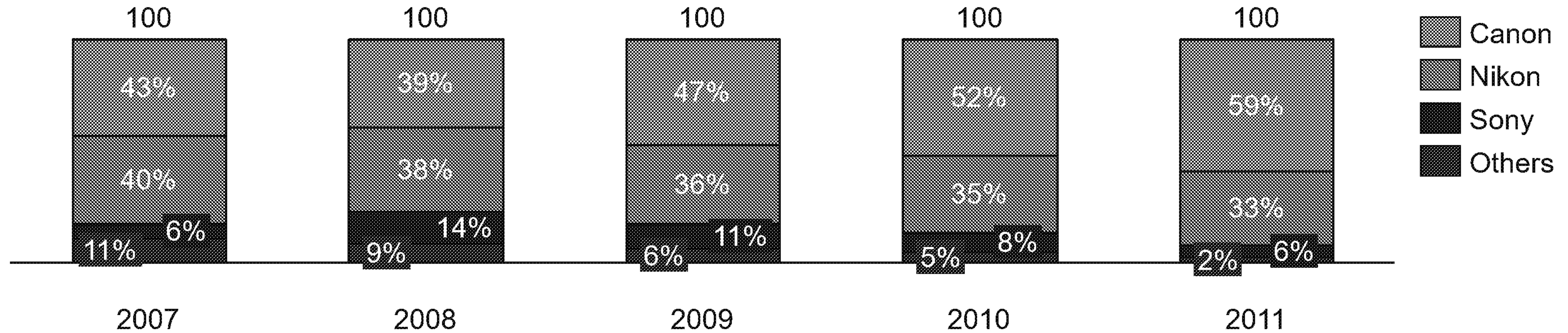


- Digital SLR remain as a niche segment, with high but still declining ASPs
- Point and shoot with >12 MP drive most of the volume in the US, yet ASP is declining
- Point and Shoot with less than 12MP are becoming less popular; sharpest decline in ASPs

2. Digital Camera Market Share: Canon and Nikon dominate High End, Well Positioned in Entry Level Compact Camera Market

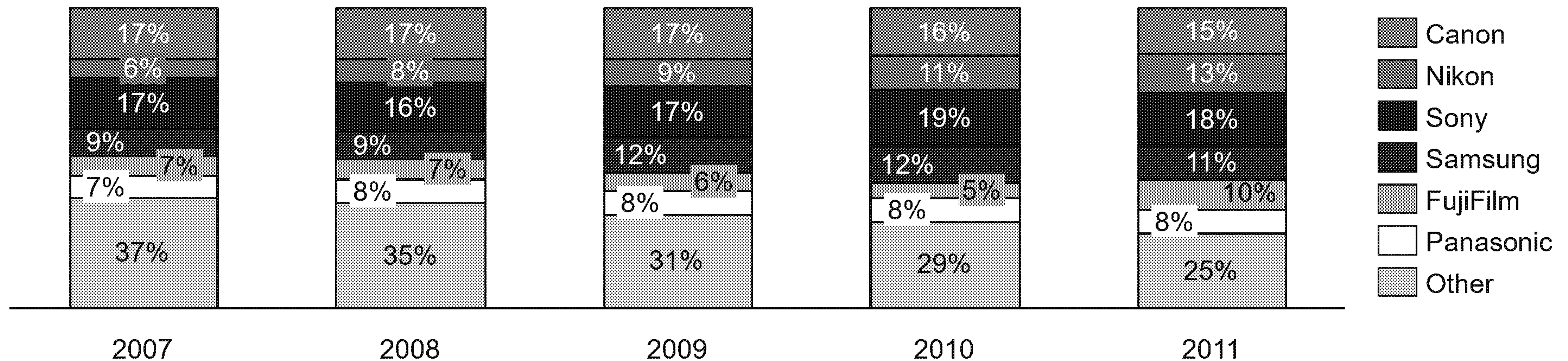
DSLR Camera Global Market Share Trend

Source: IDC, Credit Suisse



Digital Camera Global Market Share Trend

Source: IDC, Credit Suisse

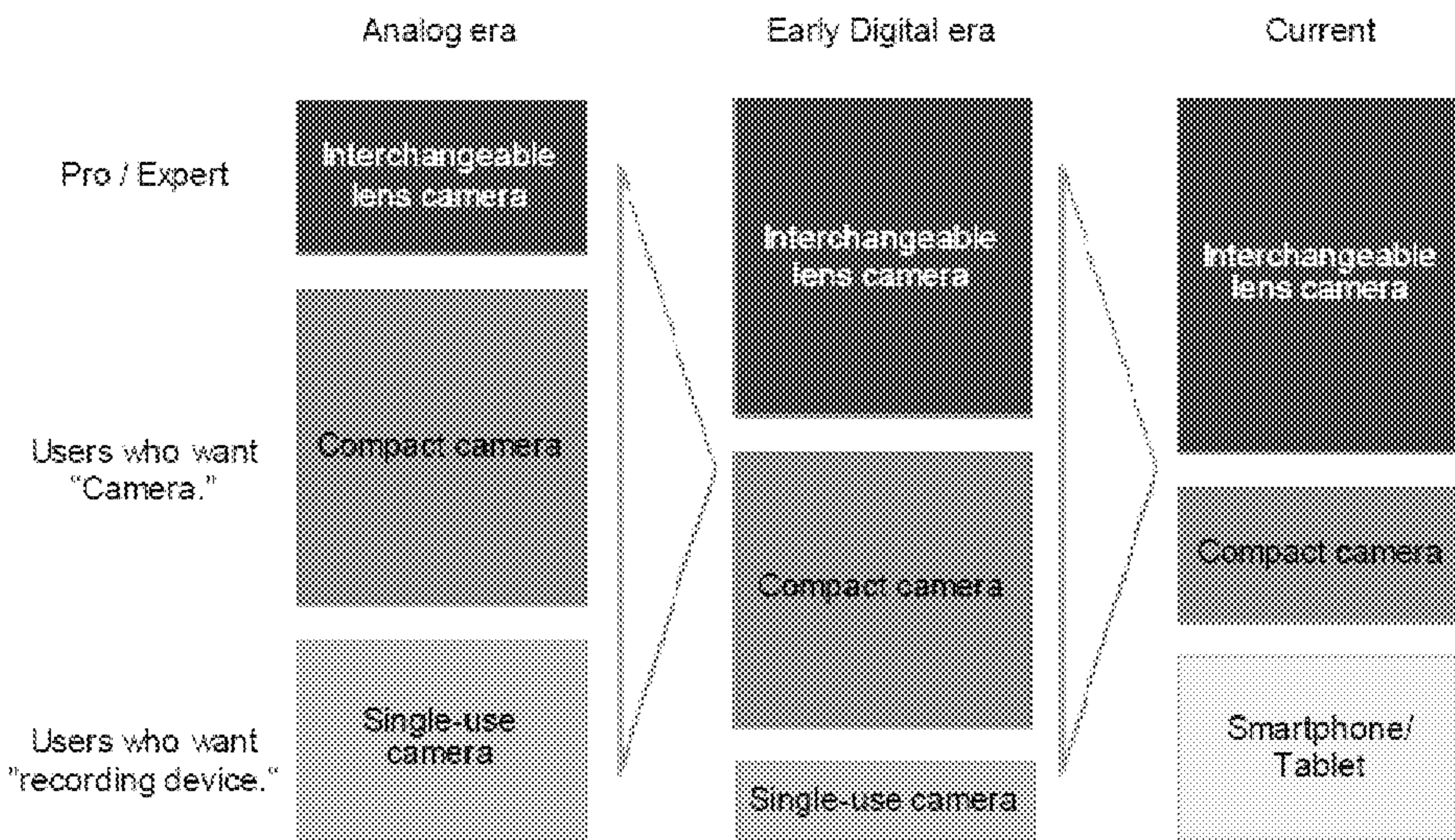


- DSLR: Canon and Nikon are strong leaders with a combined share of 80%+
- Digital Camera market: more fragmented. Canon, Nikon and Sony lead the pack with 50% combined share. Nikon expected to gain share while Canon remains stable

3. Innovative R&D and Brand Equity are Paying Off for Nikon and Canon, as the Low End Cameras are Cannibalized by Smartphones

“In 2011 27% of the pictures taken by Americans were snapped with smartphones – a solid jump from 17% the year before

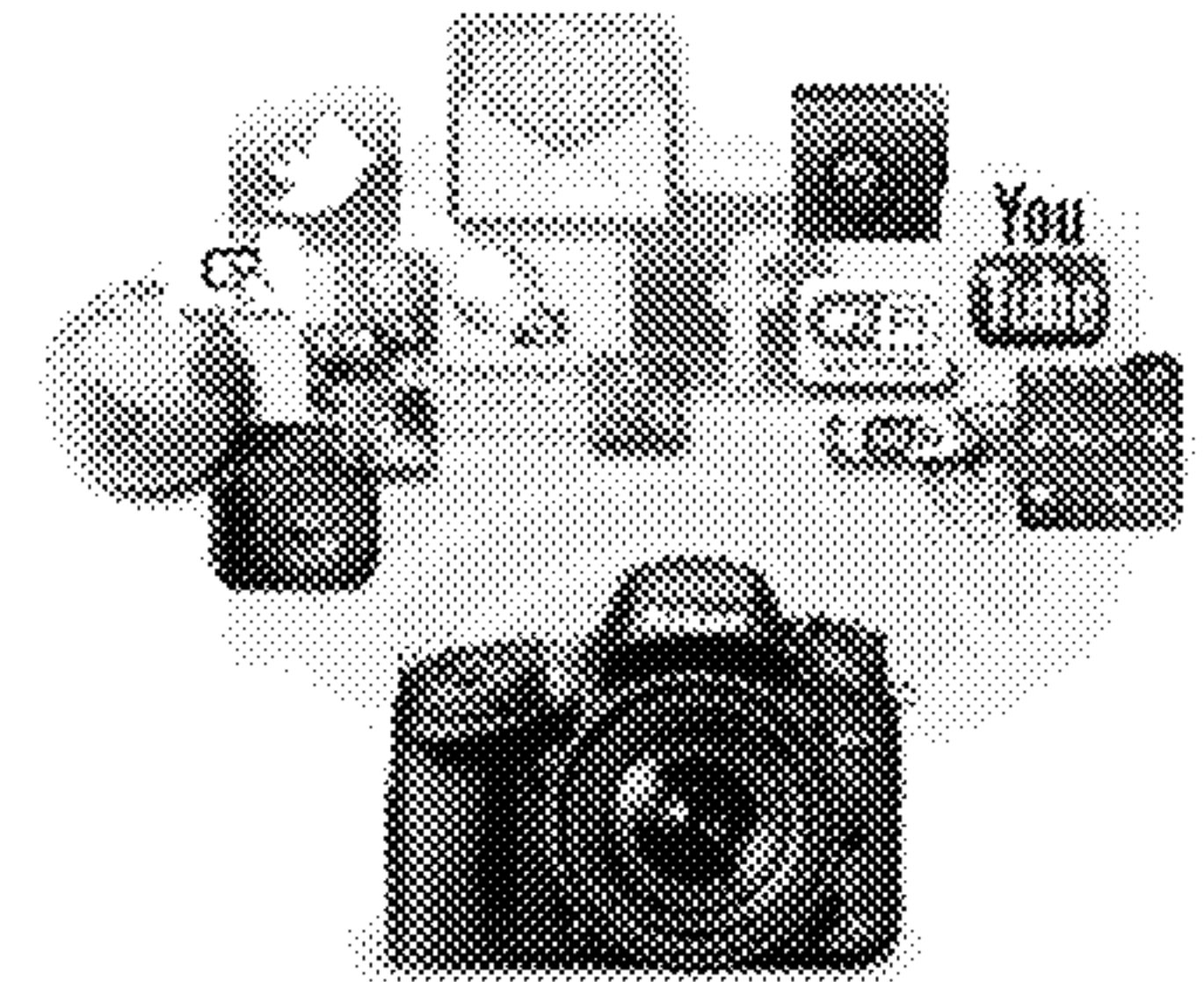
Transition of camera users



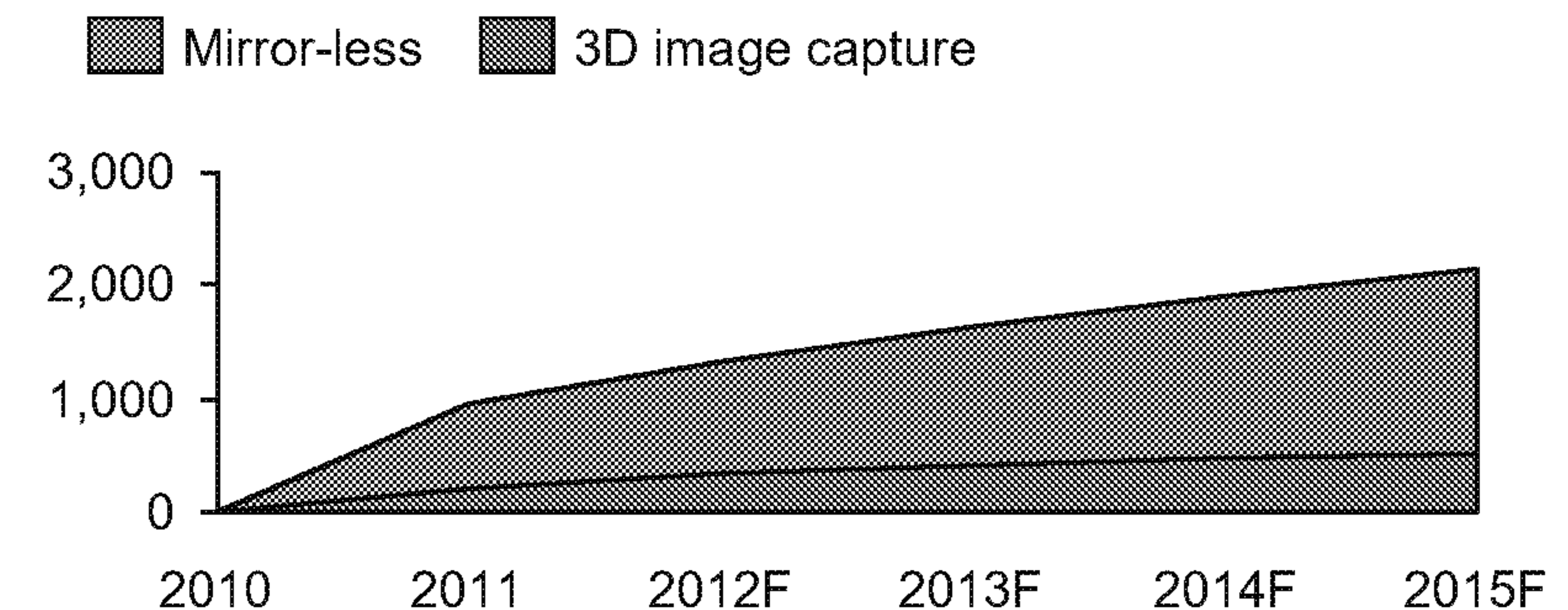
- All players adding features to low end cameras to defend share from smartphones
- Mirrorless interchangeable-lens cameras enable to expand the base (positioned in mid tier)

New Categories / Features

- Mirrorless cameras (size)
- Interchangeable lenses
- Able to capture 3D images
- WiFi Cameras
- Actioncams

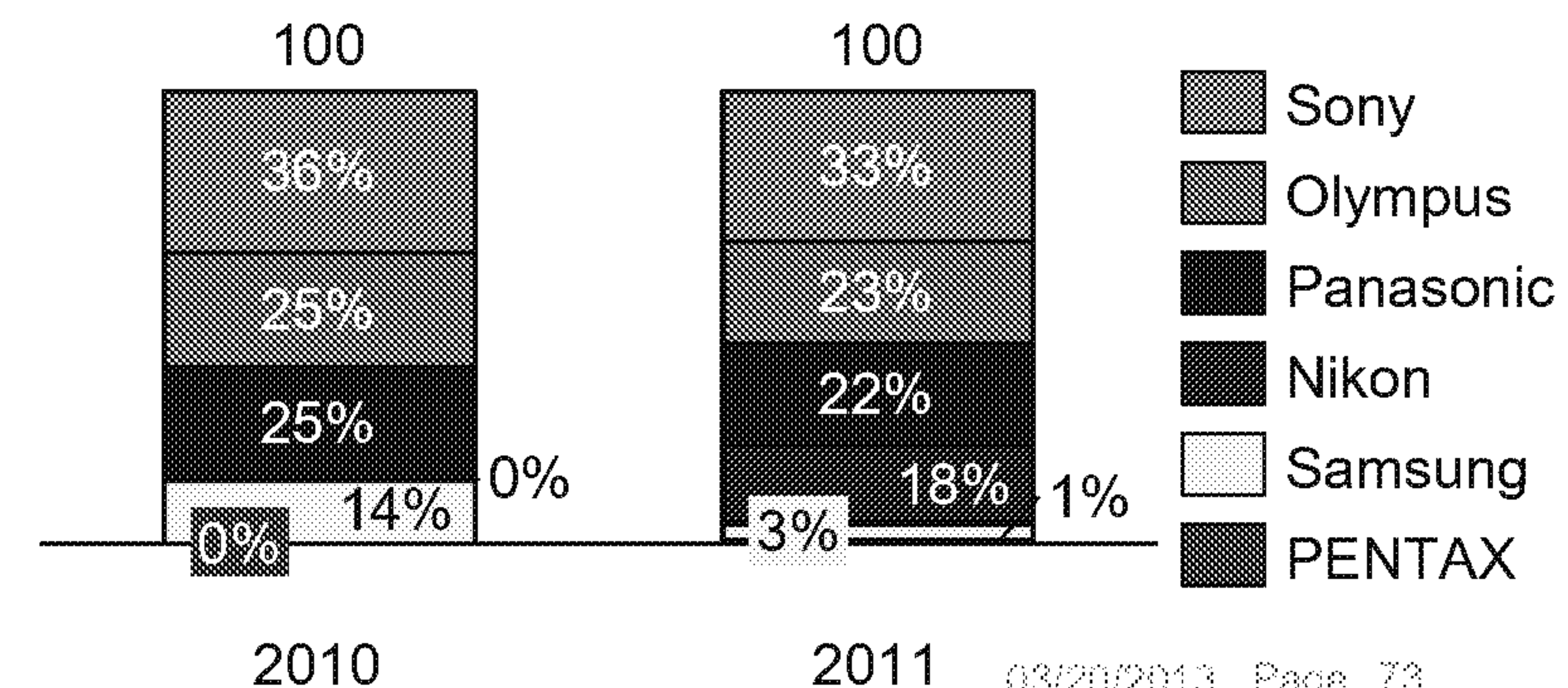


Volume Driven by new Categories Mirror-less and 3D image capture



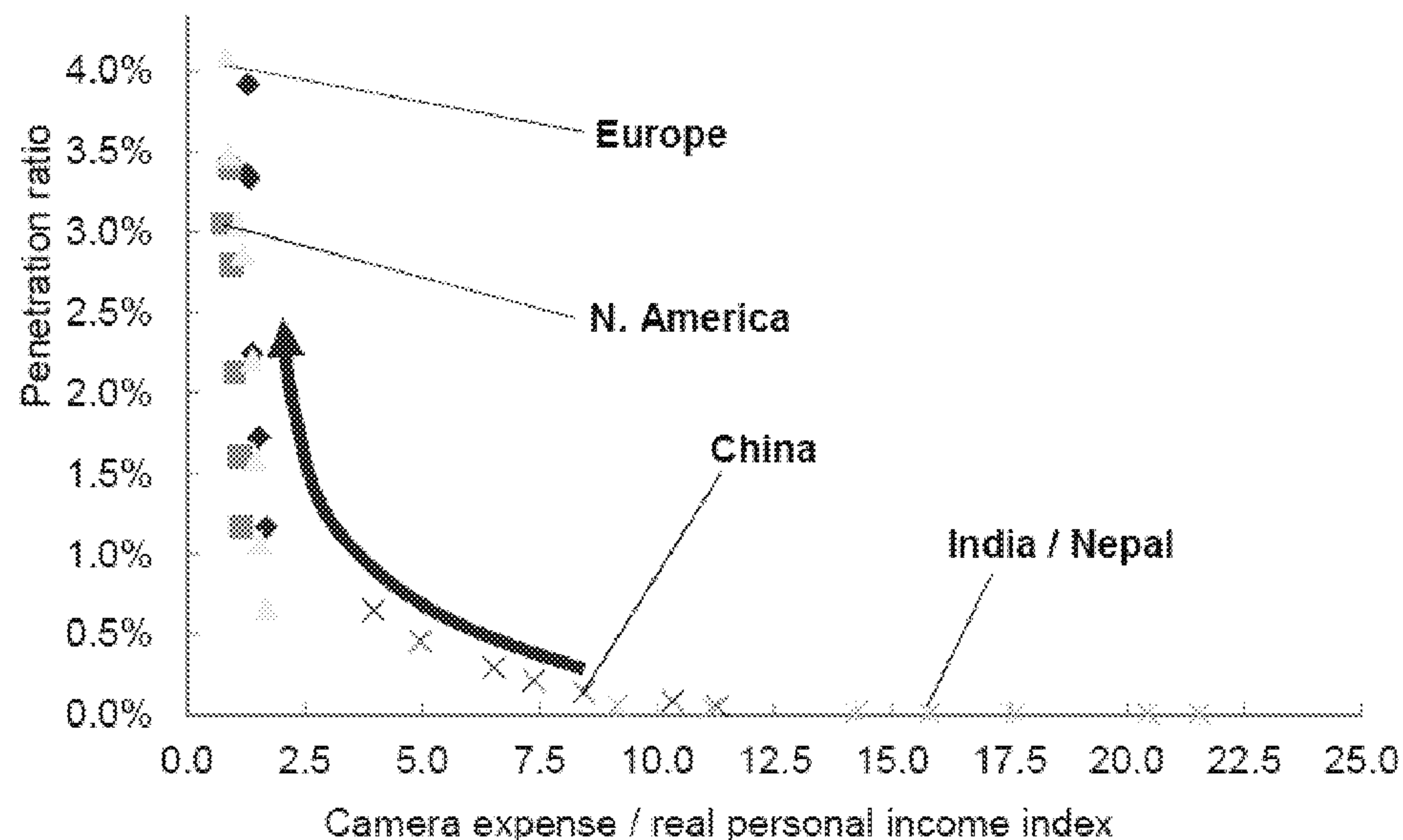
Mirrorless Camera Market Share

Source: IDC, Macquire Research Jan 2013



3. As the Industry Matures, Camera OEMs Need to Tap into Emerging Markets with Mid-tier Products

Relationship between camera expense index and penetration

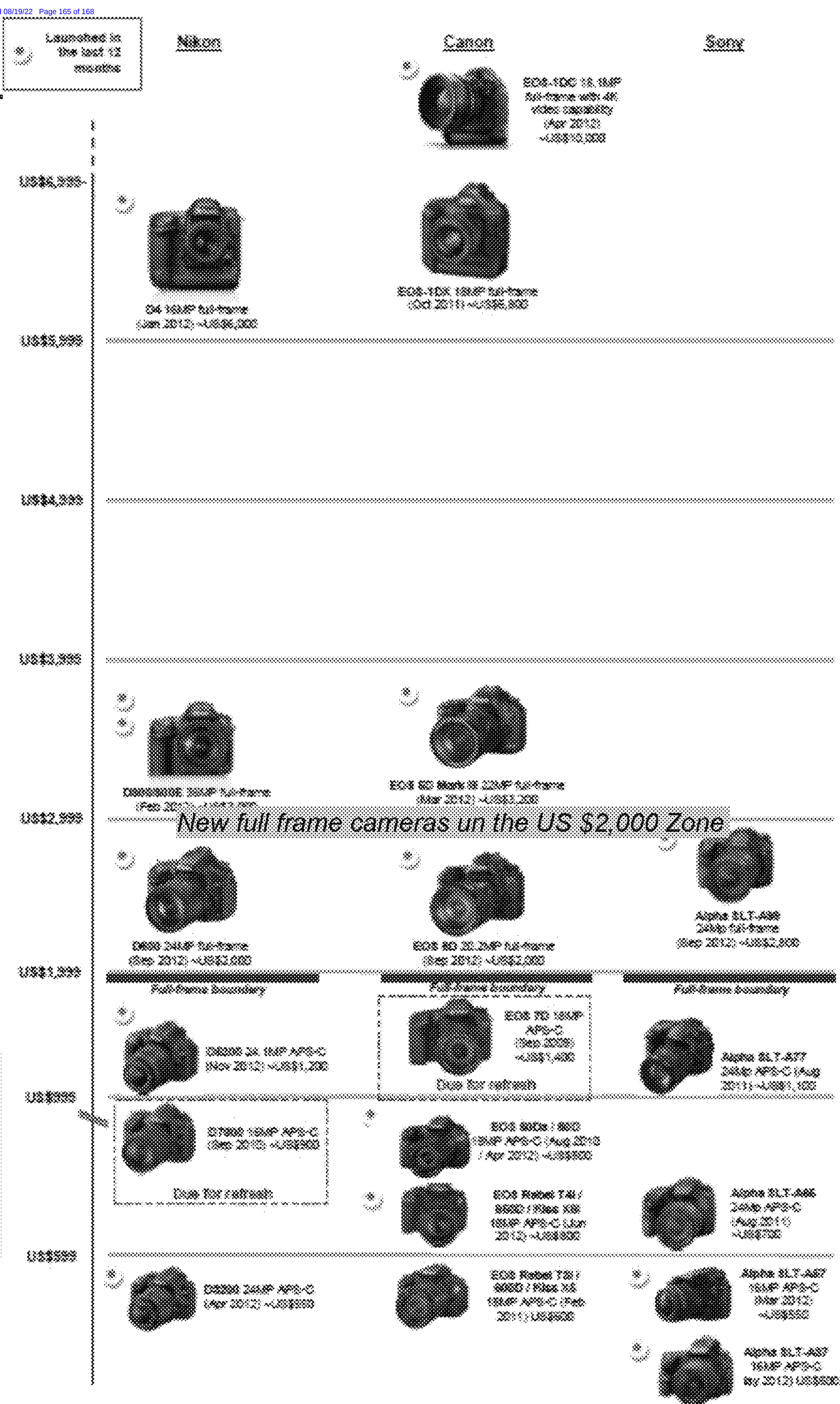


- Nikon and Canon tend to re-use components in lower tiers
- Camera OEMs to drive “mid-entry products” as purchasing power increases in China and other developed markets

Source: Credit Suisse 2012, Maquiere Research

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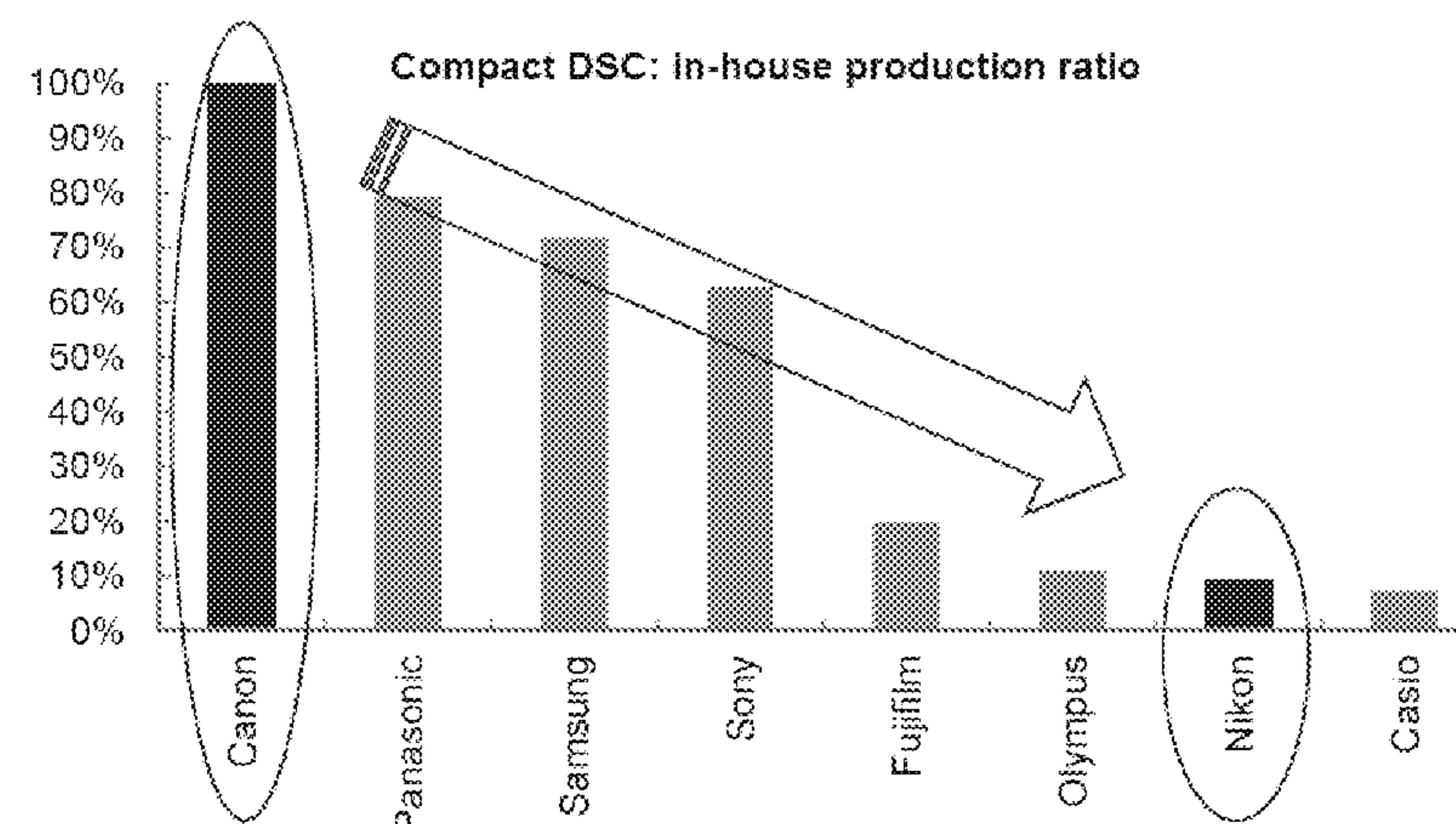


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4. Lessons from Nikon: Low Fixed Costs, Fast launch Cycles, Invest in Brand and Accessories

- Nikon better lined up to reduce fixed costs and fast launch cycles
- Well positioned in growing category (18% share of Mirrorless vs. Canon low digits)
- Re-use of components developed for higher-end cameras in lower-end models
- Similar to Canon, Nikon leverages strong brand, intensive R&D, extensive lens and accessory portfolio as high barriers to displacement/ entry
- Balanced Portfolio across multiple regions
- Repeat customers: Large portfolio of lenses and accessories to lock users: Compatible lenses with higher end SKUs and new launched models. Aims to capture casual photographers and later upgrade them (as opposed to Minolta, Canon pre and post 1987)
- Strong quality reputation: Highest ranking of customer satisfaction since 2005
- Channel marketing: In early 2000s Nikon focused on strengthening marketing with consumer electronics retailers. As a result, rapidly gained share of compact digital cameras
- Announces products early (creates excitement)

Nikon Better Positioned with Lower in House Component Production to Respond to Lower Demand of Entry Compact Cameras



Nikon Faster Cycles to Market vs. Canon Paying Off

		2011				2012											
		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Pro	Nikon							D4									
	Canon								← 3M →		1D X						
High-amature	Nikon							D600									
	Canon							5D Mark III									
	Nikon												D610				
	Canon										← 3M →			6D			
Entry	Nikon							D3200									
	Canon								← 2M →		KISS X6i						
Mirrorless	Nikon			1 J1												1 J2	
	Canon																M

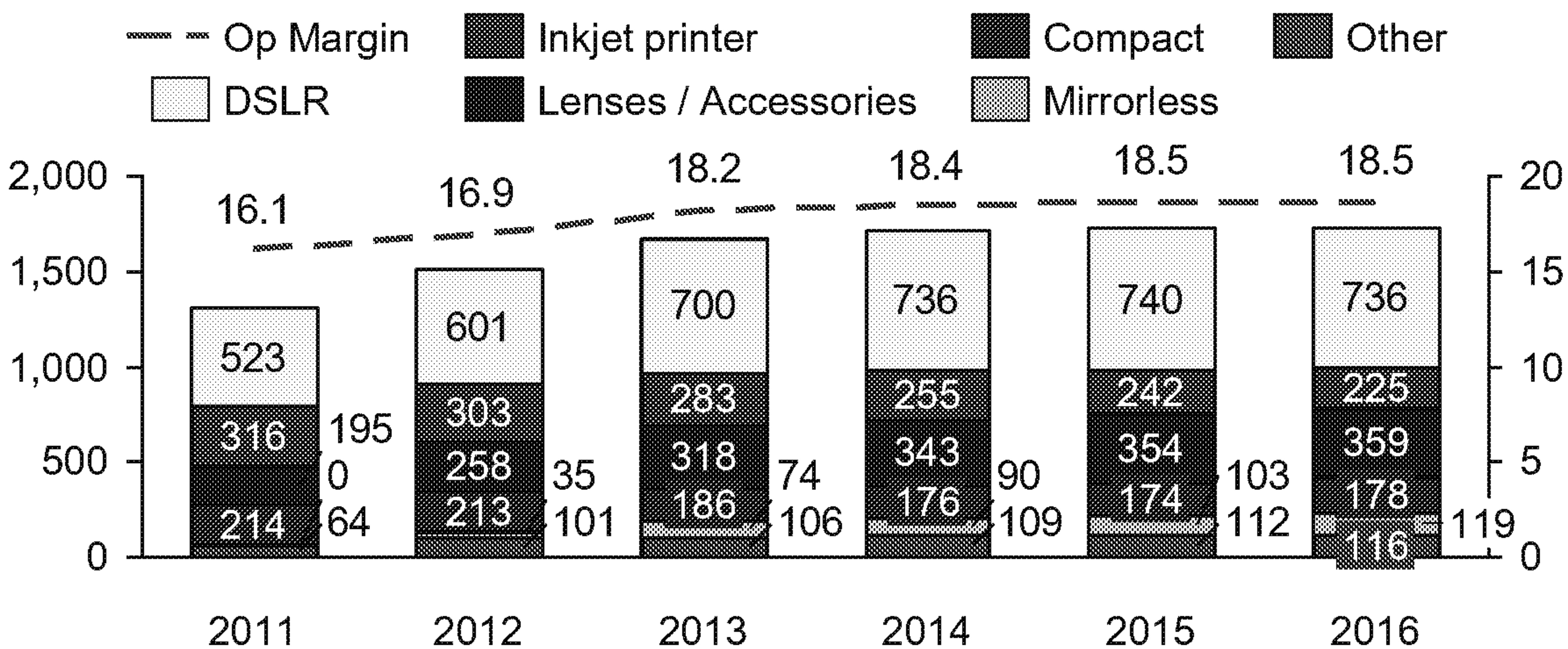
Nikon: Sales by Region

US	Europe	China	Japan	Other
24%	25%	14%	14%	23%

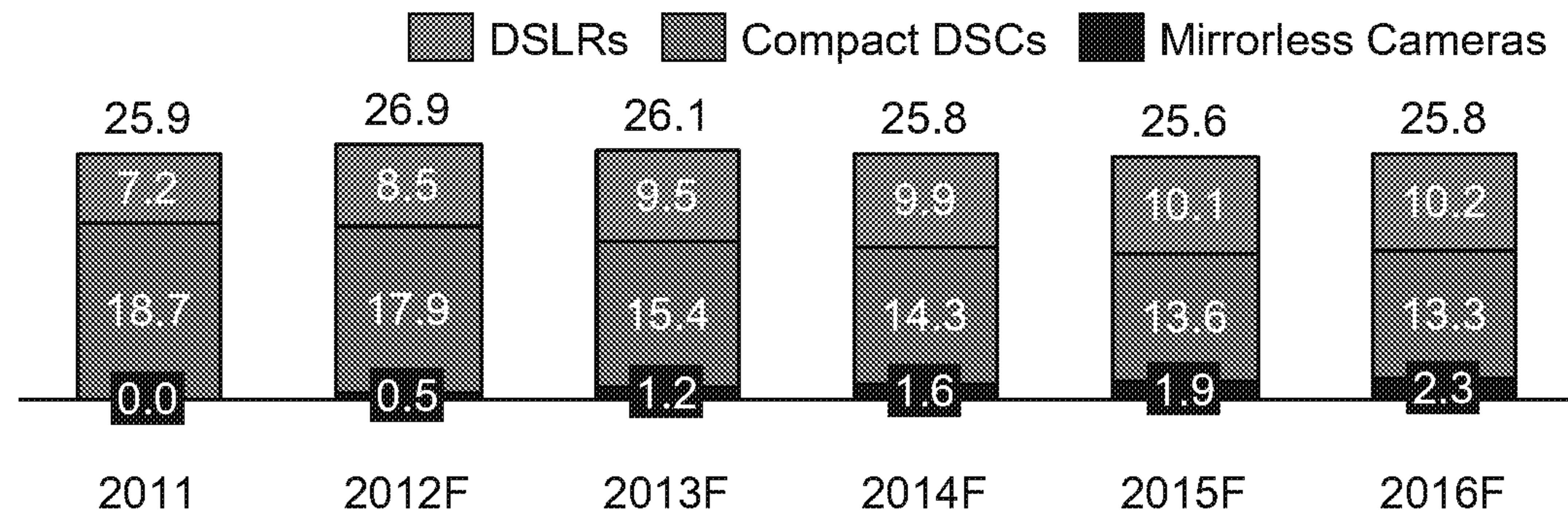
4. Lessons from Canon: Sales Driven by DSLR and Accessories Help Deliver a healthy 18% Operating Margin, And re-use components in lower end models

- Duopolistic dynamics allow Canon to maintain health operating margins
- Canon has consistently invested in strengthening its internal manufacturing capabilities (rather than ODM strategy) – does not give away margin to ODM
- Ranked 3rd in US patents 2011, followed by IBM and Samsung; (\$17.1M yen in royalty income in 2011, 2543 new patents in 2010)
- Canon leverages strong brand and extensive lens& accessory portfolio as high barriers to displacement/ entry. Compatible lenses with higher end SKUs allows to capture casual photographers and later upgrade them to higher-end cameras
- Canon (and Nikon) and re-use components developed for higher-end cameras in lower-end models

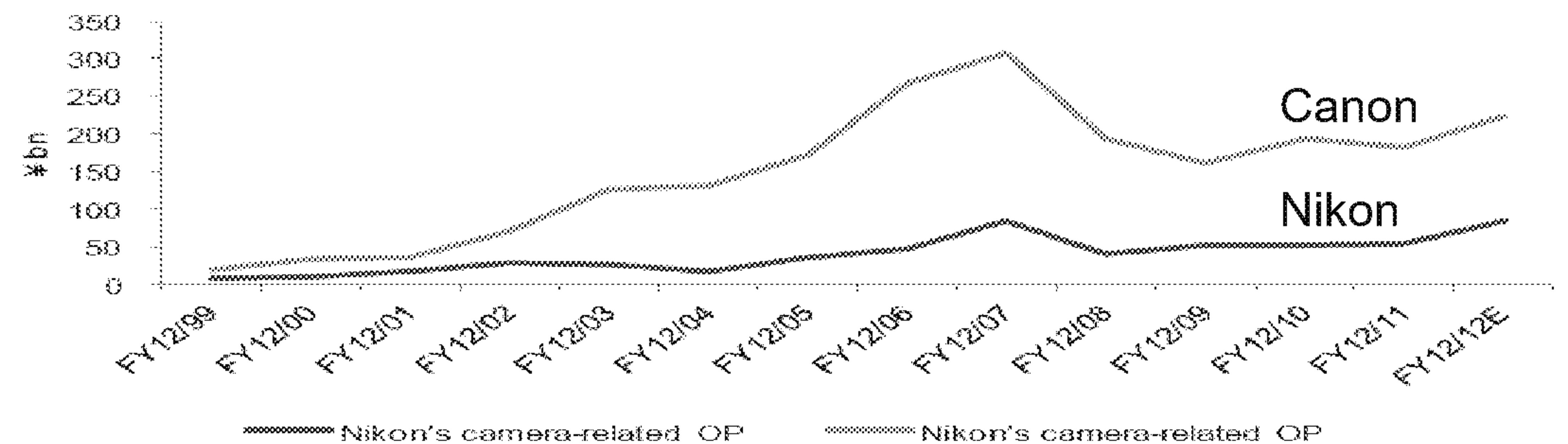
Canon Operating Margin %; Revenue by Category



Canon Volume by Imaging Category (M Units)



Canon Vs Nikon: Camera related Operating Profit (B Yen)



Canon is the Only Player that Does Not Leverage ODM Production

	Canon	Sony	Nikon	Olympus	Panasonic	Fuji Film	Samsung Electronics
DSC Products							
Compact DSC	yes	yes	yes	yes	yes	yes	yes
MLIC DSC	no	yes	yes	yes	yes	yes	yes
SLR DSC	yes	yes	yes	yes	withdrawn	no	yes
DSC Production							
Self Factories	yes	yes	yes	yes	yes	yes	yes
ODMs/EMS firms (Major ones)	no	yes (Ability/ Hon Hai)	yes (Ability)	yes (Hon Hai)	yes (Hon Hai)	yes (Altek)	yes (Altek)

Canon has highest margin of Industry as it does not pass margin to ODMs. However, production-in-house seems to be slowing Canon product cycles